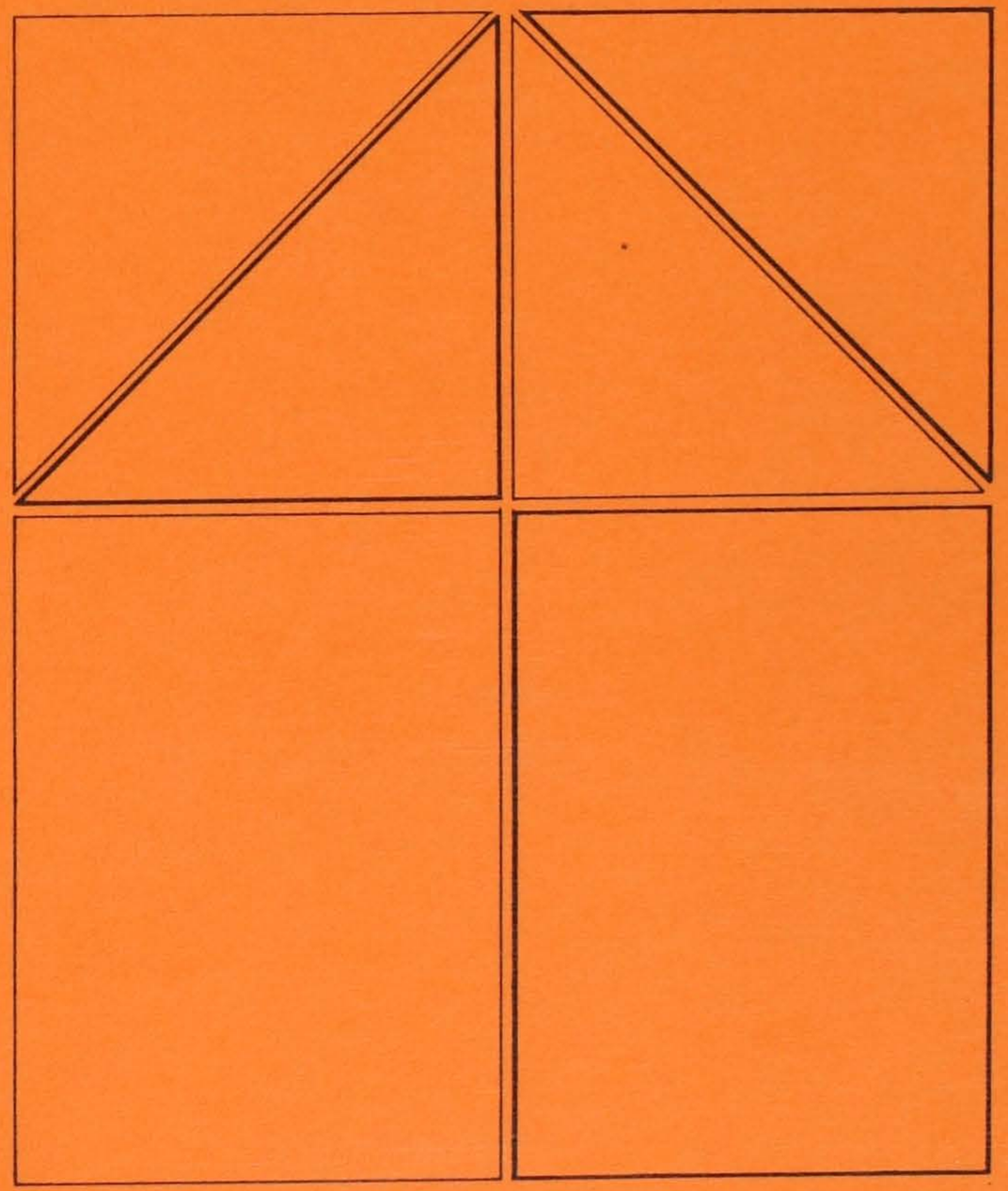
5-1979

Low-Rise Housing for Elizabeth, New Jersey

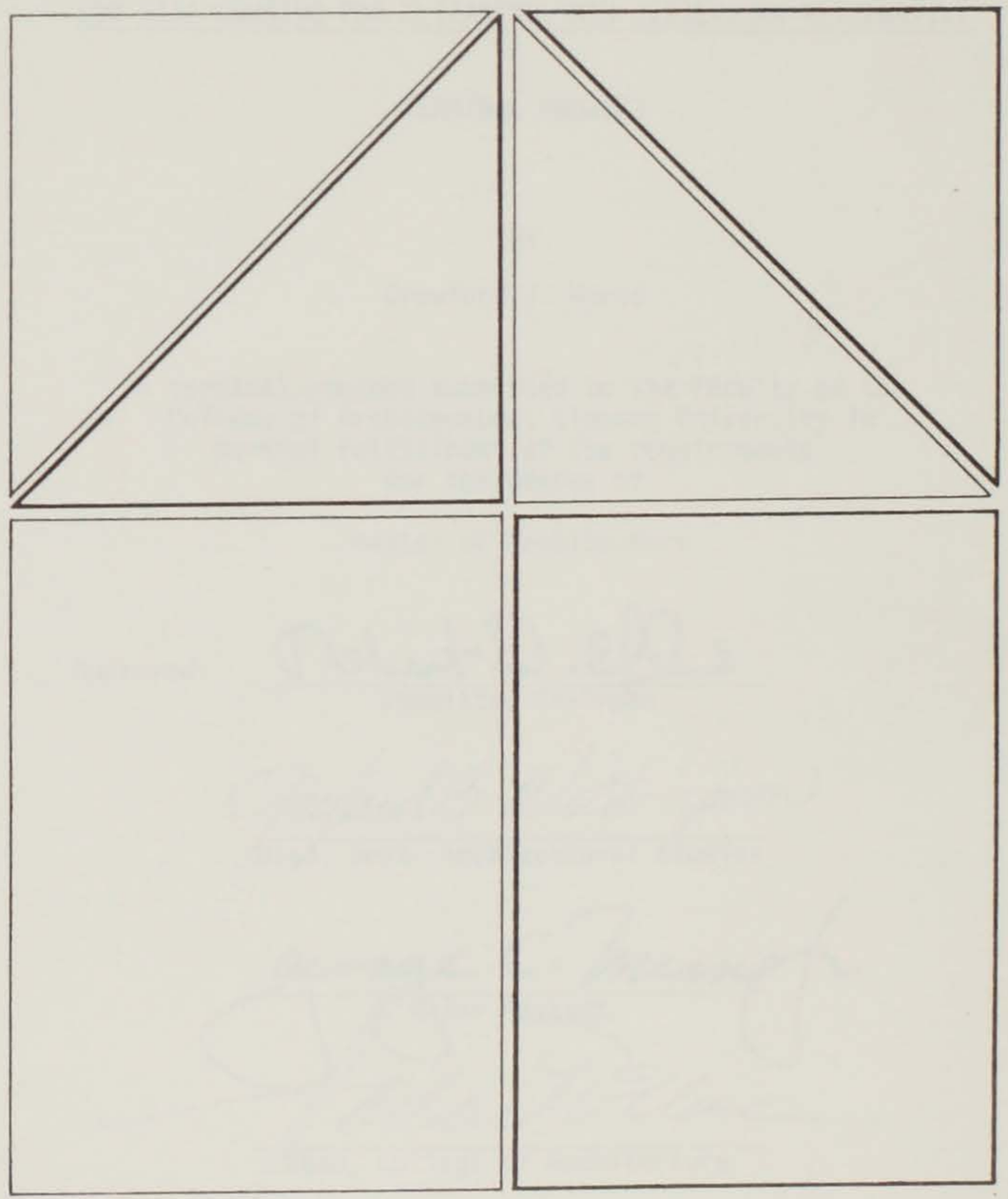
Crawford John Horne
Clemson University



CRAWFORD JOHN HORNE

LOW-RISE HOUSING FOR ELIZABETH, NEW JERSEY

AN ALTERNATIVE



CRAWFORD JOHN HORNE

LOW-RISE HOUSING FOR ELIZABETH, NEW JERSEY

AN ALTERNATIVE

LOW-RISE HOUSING FOR ELIZABETH, NEW JERSEY: AN ALTERNATIVE

TERMINAL PROJECT

by

Crawford J. Horne

A terminal project submitted to the Faculty of the
College of Architecture, Clemson University in
partial fulfillment of the requirements
for the degree of

Master of Architecture

Approved: [redacted]
Committee Chairman

[redacted]
Head, Dept. Architectural Studies

[redacted]
Major Advisor

[redacted]
Dean, College of Architecture

APPENDIX C - POPULATION BY DECADE IN ELIZABETH

	1940	1950	1960	1970	Percent Change 1940-1950	1950-1960	1960-1970
Total Population	109,912	112,817	107,698	112,654	2.6	-4.5	4.6
Density Population/Square Mile	9,394	9,642	9,205	9,629	2.6	-4.5	4.6

APPENDIX D - HOUSING UNITS IN ELIZABETH BY UNITS IN STRUCTURE

1 Unit Detached	1 Unit Attached	2 Units	3-4 Units	5-9 Units	10-19 Units	20-49 Units	50 or more Units	Mobile Home or Trailer
6,934	660	11,484	5,424	3,185	2,876	4,123	4,733	4

APPENDIX E - HOUSING UNITS IN ELIZABETH BY YEAR STRUCTURE BUILT

1969-1970	1965-1968	1960-1964	1950-1959	1940-1949	1939 or earlier
136	2,559	4,226	3,299	3,608	25,595

DEDICATION

To my Mother, my Father,

and Sharon

ACKNOWLEDGEMENTS

My appreciation is extended to the following members of the faculty of the College of Architecture without whose time and interest this investigation would not have been possible:

Robert Eflin

M. David Egan

John Jacques

Dean Vollendorf

I would also like to thank Harlan E. McClure, Dean of the College of Architecture, who has dedicated so much of his time toward the administration of the school, both in Clemson and Genoa, Italy. The benefits received during the past six years are innumerable.

INTRODUCTION

The City of Elizabeth has a housing problem. This problem has several facets including a shortage of adequate housing to meet the needs of the city's growing population. The aim of this study is to design a form of housing that will best satisfy the needs of that segment of the population which is projected to show the greatest increase in numbers. A low-rise approach to the design of this housing has been chosen for several reasons including scale, economics, and adaptability to family living.

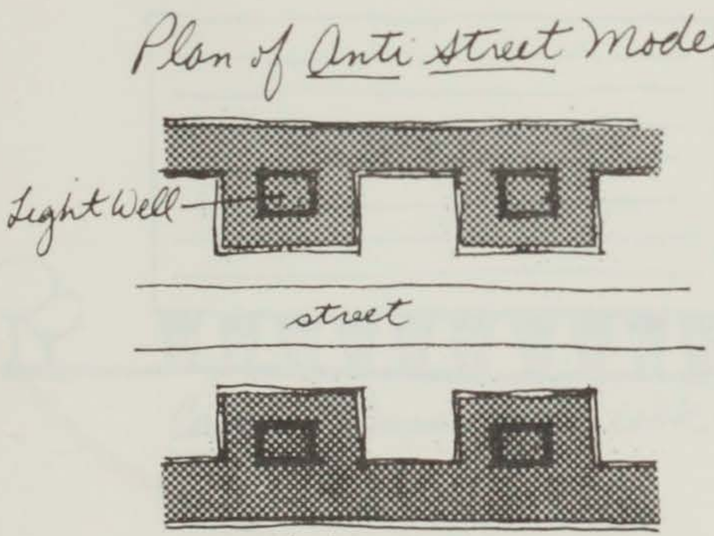
Because of the nature of the City of Elizabeth, very little vacant land of any significant acreage is available for the construction of new housing. As a result, most new housing will be constructed within the existing framework of the city and must adapt to the present block and street patterns. This new housing must also achieve higher densities than those which existed previously in order to accommodate the increasing number of people.

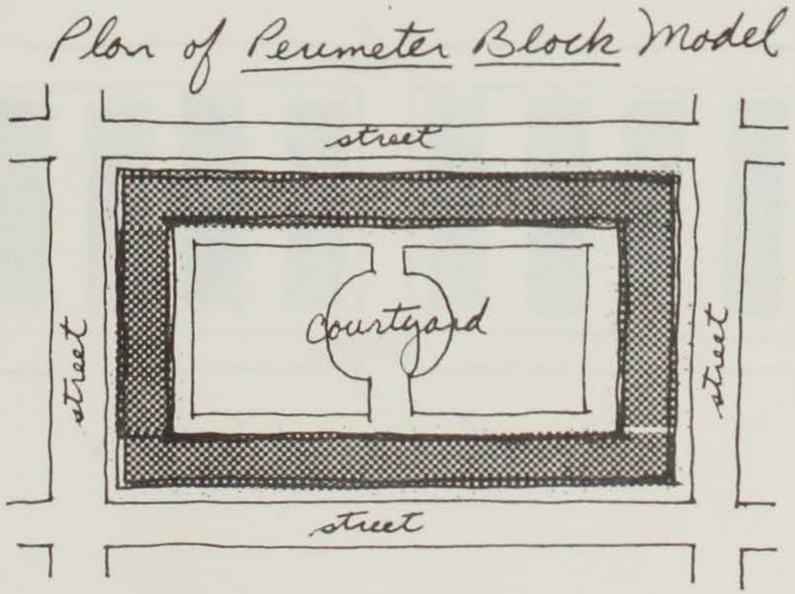
The result is that there exists, in Elizabeth, a need for low-rise, high-density housing. This housing should provide an alternative to that which presently exists within the city in the form of the three public housing projects, Mravlag Manor, Pioneer Homes, and Migliore Manor. The search for this alternative is what this study is all about.

The solution to this problem will evolve only after a logical process has been completed successfully. This process will include research in the current issues of housing in general as they apply to the nation, the region and the City of Elizabeth. Several case studies will be analyzed to observe how other architects have approached similar problems. Location studies will be undertaken and various information relating to the city and its residents will be gathered and analyzed. Eventually, a site will be chosen and analyzed, and a program will be formulated based on the information obtained in the research phase. At this point, a solution will be sought, and presented graphically once it is found.

TABLE OF CONTENTS

PROBLEM STATEMENT





1.1 EVOLUTION OF HOUSING CONCEPTS: 1870-1970

Introduction

A capsulized history of the development of housing concepts during the past century has been included in this section. This history will serve to lead up to the introduction of current trends in national and international housing design.

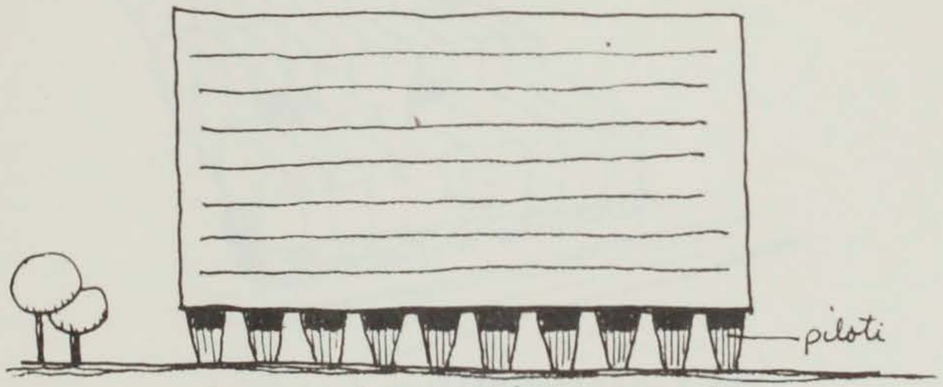
Tenement Development and the Anti-Street Models of the 19th Century City: 1879-1938

Prior to 1918 in the expanding urban centers of such as New York, Paris, and London, city block planning theories underwent certain transformations. In New York, attempts were made at improving the standards for low-income housing using a tenement design, while in Paris and London, set back models were being studied. Le Corbusier continued this set back tradition with his Maison Domino of 1915. All of these set back solutions were strongly anti-street, disrupting the enclosing continuity of the traditional street.

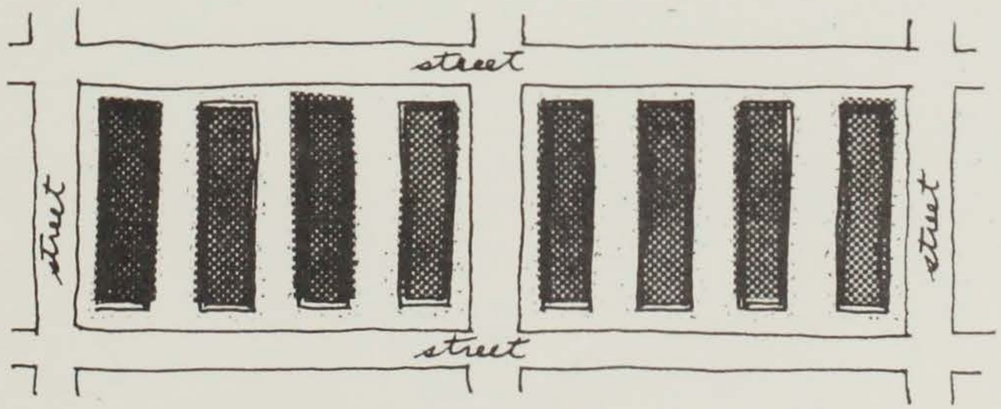
In New York, a number of architects developed the earlier tenement designs further, finally coming up with a design in 1896 which used at internal set back profile to provide adequate light and air to every room in the tenement. This design, by Ernest Flagg, dominated New York tenement development for the next forty years. By the 1930's however, the American architects began to turn towards the set back block and the row house models of Europe.

Evolution of the Perimeter Block Model: 1895-1923

In middle Europe, modern tenement development took a course intent on maintaining the street. Designers in Germany and Holland developed a perimeter residential block that preserved the continuity of the street and opened up the courtyard to be used as



Corbu's Marseille Block



Plan of Open Row Model

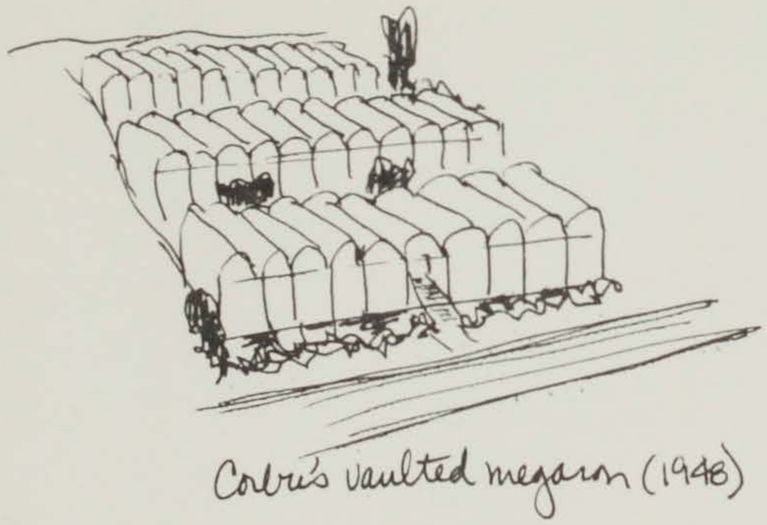
an enclosed, semi-public space. By the mid 1920's, this perimeter block model was universally accepted as the standard European building block for low cost urban housing.

The Influence of Le Corbusier: 1922-1956

In Le Corbusier's Ville Contemporaine each courtyard block enclosed a large green space. The residential units comprised two-story, L-shaped, duplex units, each enclosing its own garden terrace. These were fed by wide access decks elevated some five to eleven floors above grade. From this point on, the tendency was towards the ultra-rationalist Modern Movement. Corbu had brought the residential unit to its formulation as a free-standing, self-contained slab - the neighborhood unit as a megastructure. It was, however, the high-rise residential tower which he developed as a prototype that had the greatest impact on the spacial pattern of New York. It became the norm of the New York City Housing Authority from 1934 until the early 1960's.

The Evolution of the Open Row Model: 1923-1933

A radical change in German residential block planning came about in the mid 1920's. This change involved a transformation from a block arrangement facing directly onto the street, to open rows of identical length, set endward to the street, and arranged a standard distance apart. The next step was to increase the height of these three-story walkup blocks through the use of elevators. The resulting slab, along with the residential tower, became the prime high-density model of the post 1945 era. At the same time however, a counter-movement arose proposing a "carpet-courtyard housing" approach to the problem of housing at high-densities.



Corbu's vaulted megaron (1948)

The Evolution of Low-Rise Housing: 1948-1966

The first signs of this movement came directly after the war when the isolated tower or slab, and the open row house, had become universally accepted as standard components for residential planning. Interestingly enough, Corbu made one of the first moves in this direction. His proposal called for a revival of the barrel-vaulted megaron of the Mediterranean, but was never realized. It had a strong influence on a later scheme that was realized in Halen, outside Bern, Switzerland in 1962.

In the 1950's a movement surfaced which sought to establish patterns of association and identity which would relate more to the social relationships of the tenants. This resulted in mixed developments with blocks of different heights, wasted open "public" spaces, and unequal distribution of amenities.

By the late 1950's, the English were already oriented towards the adoption of low-rise housing as a general policy, and, after considerable resistance along the way, it has dominated British housing construction. "Carpet housing" has become widely accepted for adaptation to hillside sites in Switzerland and even made an appearance in the U.S. in the UDC development in Ithica, New York.

(Note: The information contained in this section was obtained in its entirety from the study by the Institute for Architecture and Urban Studies for the New York State Urban Development Corporation.)

1.2 THE NATION

Introduction

The following pages describe, in brief, the history of federal housing policy in the United States. Also included are problems with existing policy as well as suggestions for new approaches to the design and administration of housing in general.

Policy

1934 - Federal Housing Administration

1937 - Public Housing

1944 - Veterans Administration

1949 - "....a decent home for every American."

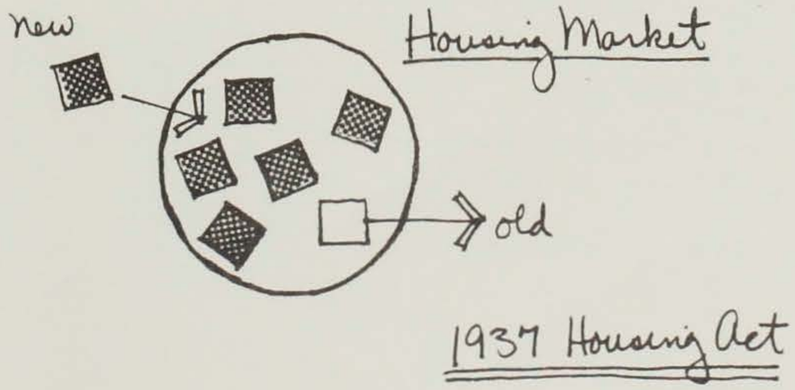
1954 - "Workable Program" for community improvement

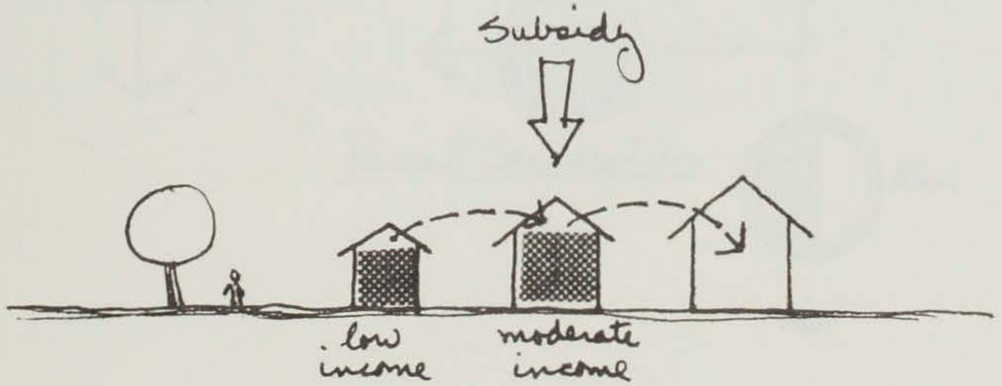
1959 - Direct loans for elderly housing

1965 - Housing and Urban Development

1968 - Interest Subsidy Program

There were no national housing policies or programs in the U.S. until the depression years. The first major program came about in 1937. It was called the Wagner-Steagull Act and it stated that no units were to be built without destroying an equal number of units in poor condition. The next major program was the National Housing Act of 1949 which set up as a goal "...a decent place to live for every American." This program set out to clear slums and blighted areas, and began a massive rehabilitation program. (Housing Urban America, "Public Housing and the Poor".)





The earliest forms of government assistance consisted of subsidized large public housing developments constructed and operated by local housing authorities. With the revival of multi-family housing in the 1950's, New York City initiated several programs for subsidized apartment houses, but it took some time for these to be accepted nationally.

Initially, more priority was given to lower income assistance programs because it was felt that this would have a greater impact on the inner city, where most of the low-income families live. Recent studies have shown, however, that subsidizing moderate income levels has had a greater effect by allowing these people to move into better conditions, freeing their old dwelling for eventual occupation by lower income people. (Housing Urban America, "Toward a Federal Housing Policy".) The results are improved living conditions for both income groups. More recently, local housing authorities have been leasing or purchasing units in scattered locations for conversion into public housing and have instituted a lease-purchase plan permitting eventual ownership by low-income families.

Various federal and state programs are now available for use by cities seeking to improve conditions, especially in areas of inadequate or substandard housing. These programs include housing assistance programs, housing grant programs, urban renewal programs, and the model cities program on the national level. State level programs include a rent supplement program, urban renewal assistance, relocation assistance, and the creation of the New Jersey Housing Finance Agency. A description of each of these programs would involve too much time and space to be justifiable for this investigation.

Most publicly supported housing programs are formulated through political as opposed to market processes. For example, an FHA house is within the means of the median American family. This neglects the average non-white family, the family headed by a woman, the elderly, and other poor families. Also, from 1935 to 1950 the

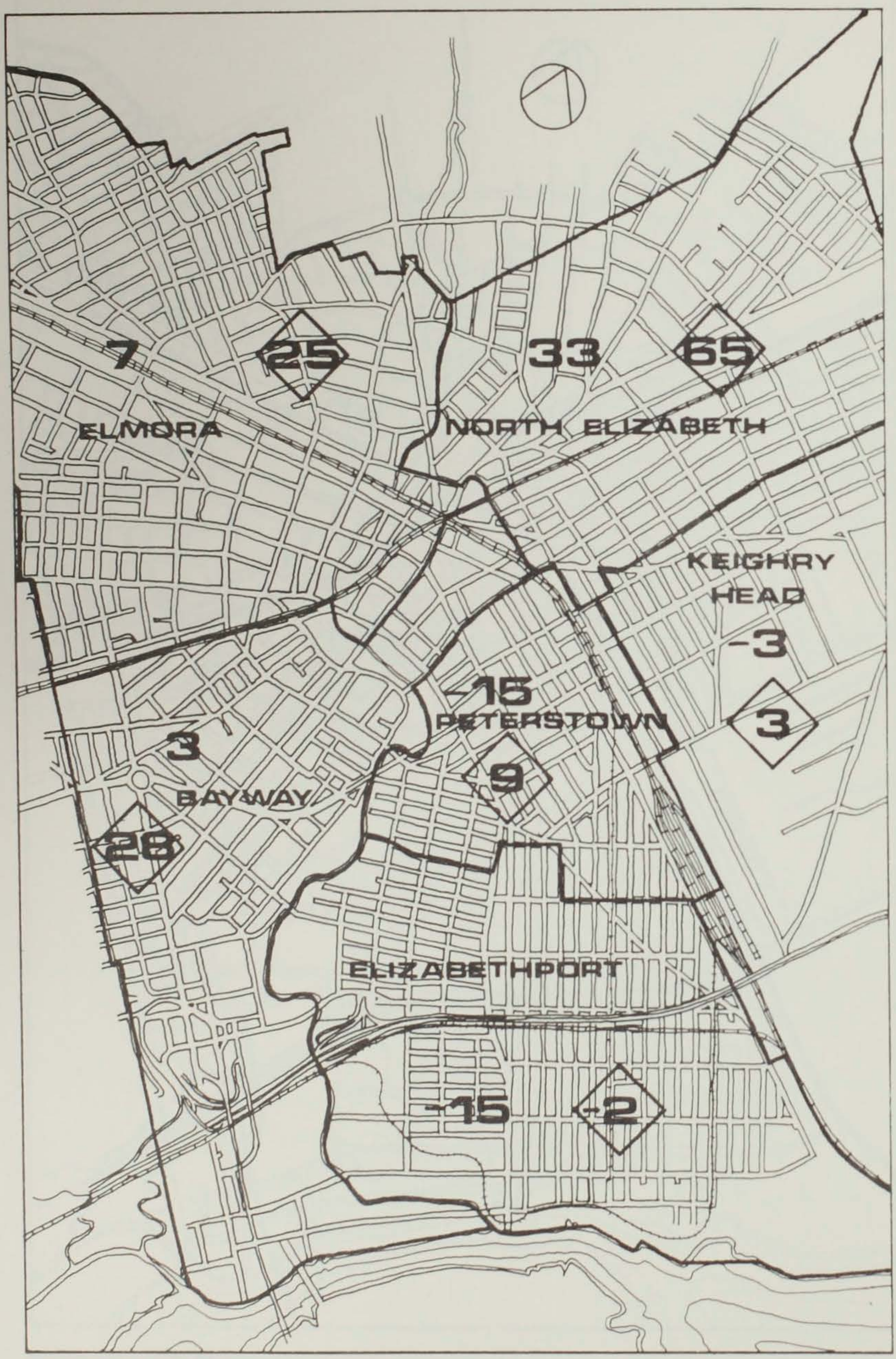


PLATE A - NEIGHBORHOOD PLANNING DISTRICTS

POPULATION CHANGES (%) 1940-1960 ×

HOUSING CHANGES (%) 1940-1960 ◇×

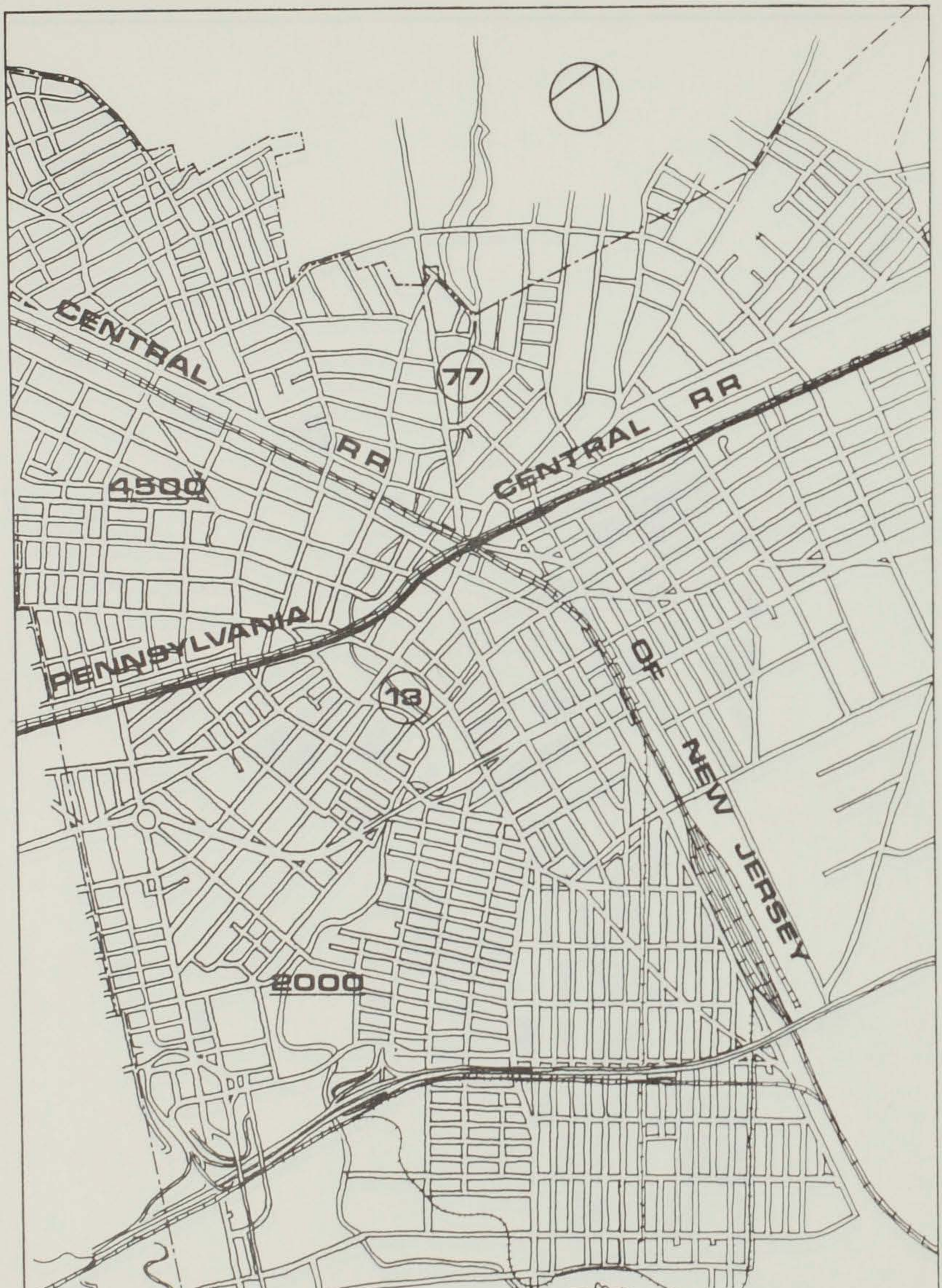


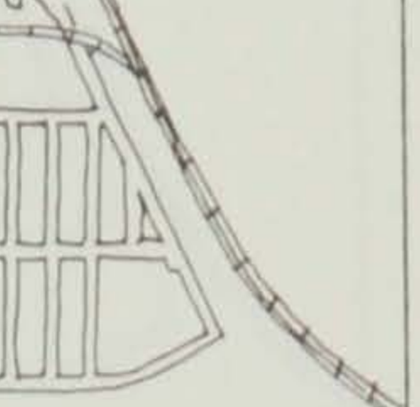
PLATE B - HOUSING STARTS IN ELIZABETH

STARTS (%) 1940-1960 ⊗

STARTS 1960-1966 X

PLATE C - CONDITION OF STRUCTURES

BLOCKS WITH CONCENTRATIONS OF
DEFICIENT STRUCTURES - 1970



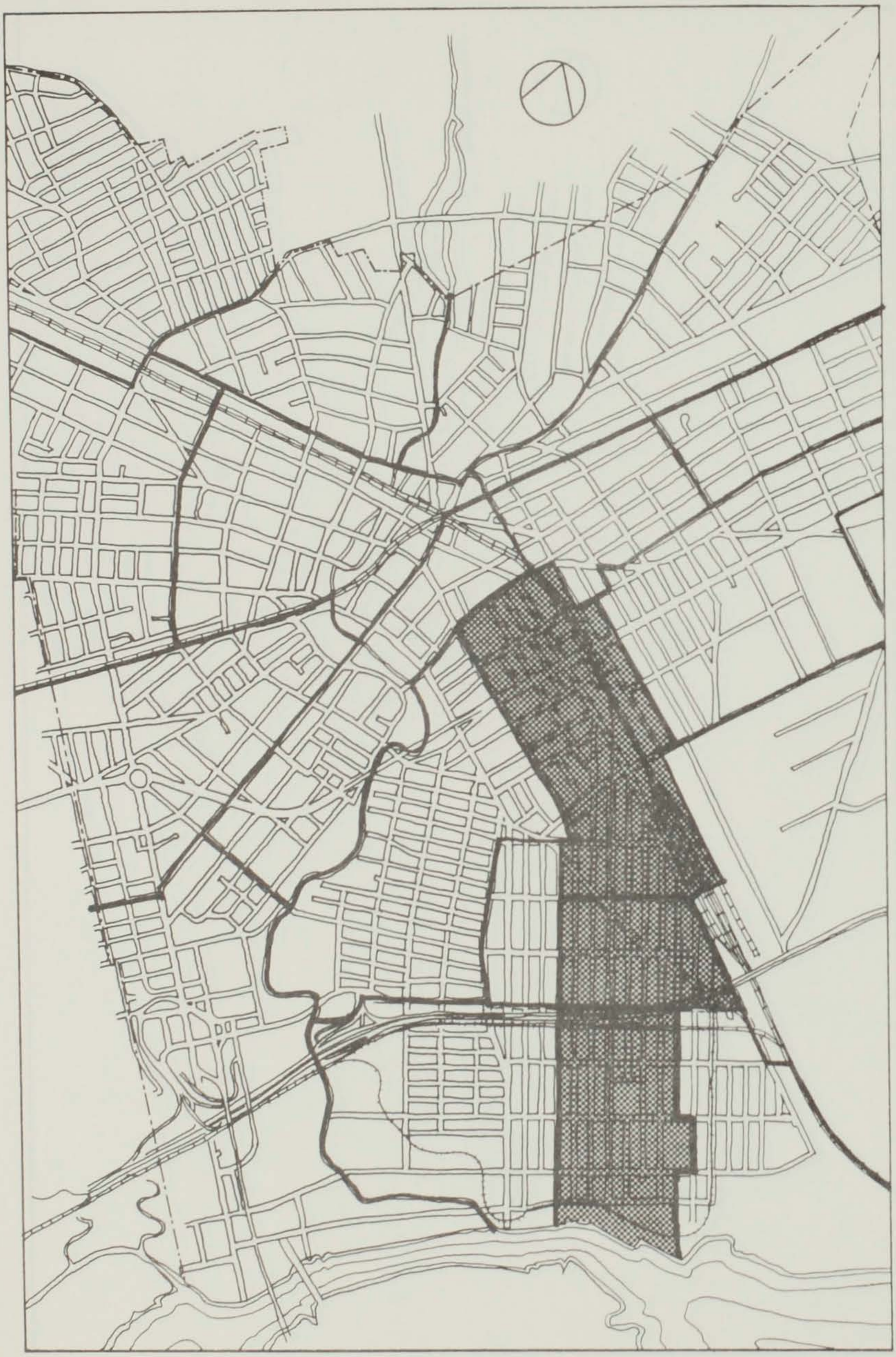


PLATE D - MINORITY GROUP HOUSING PATTERNS

NON-WHITE POPULATION OVER 20% - 1960

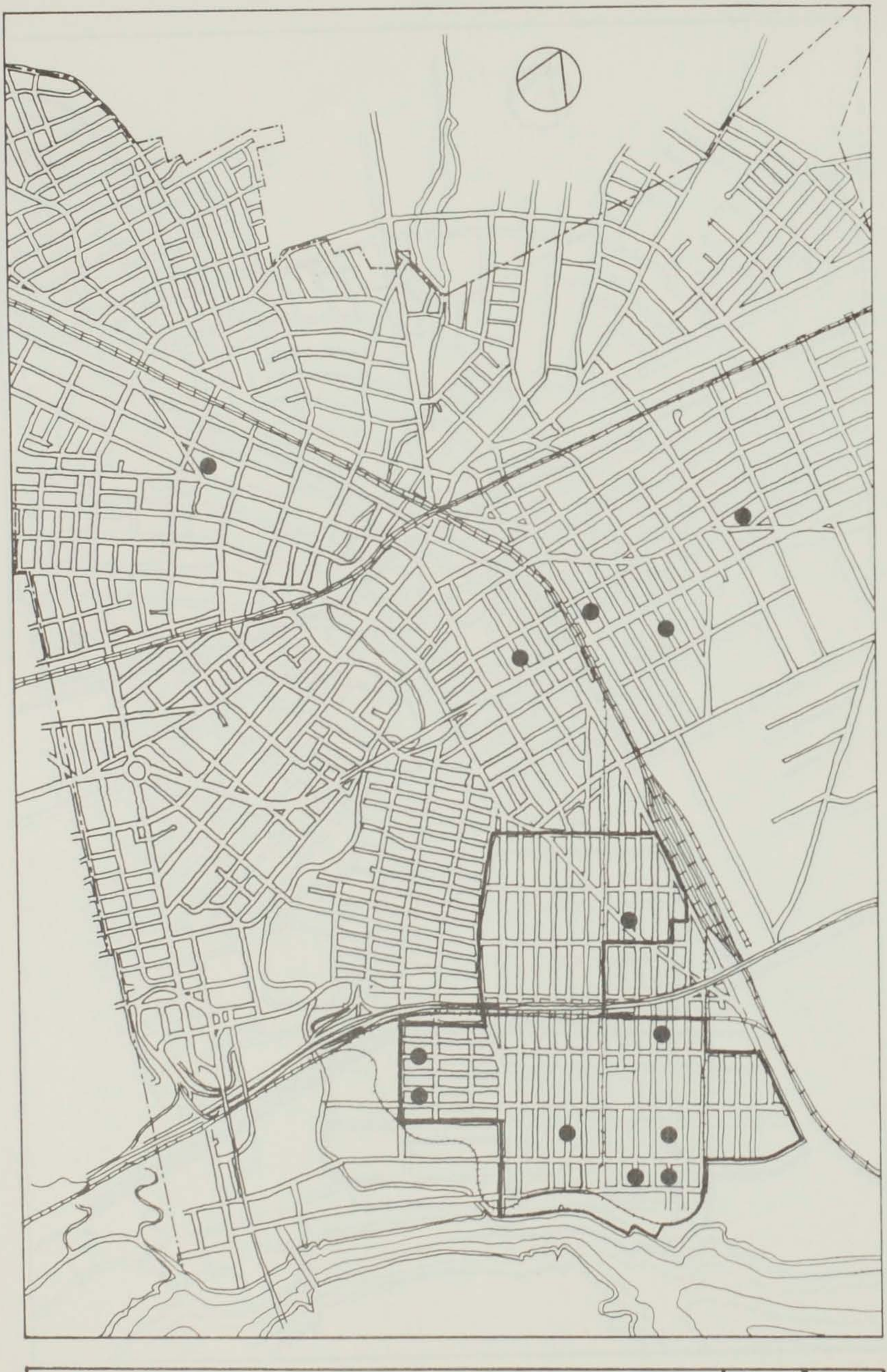


PLATE E - CRP HIGH PRIORITY ACTION AREA

CONCENTRATIONS OF ARRESTS - 1970 ●

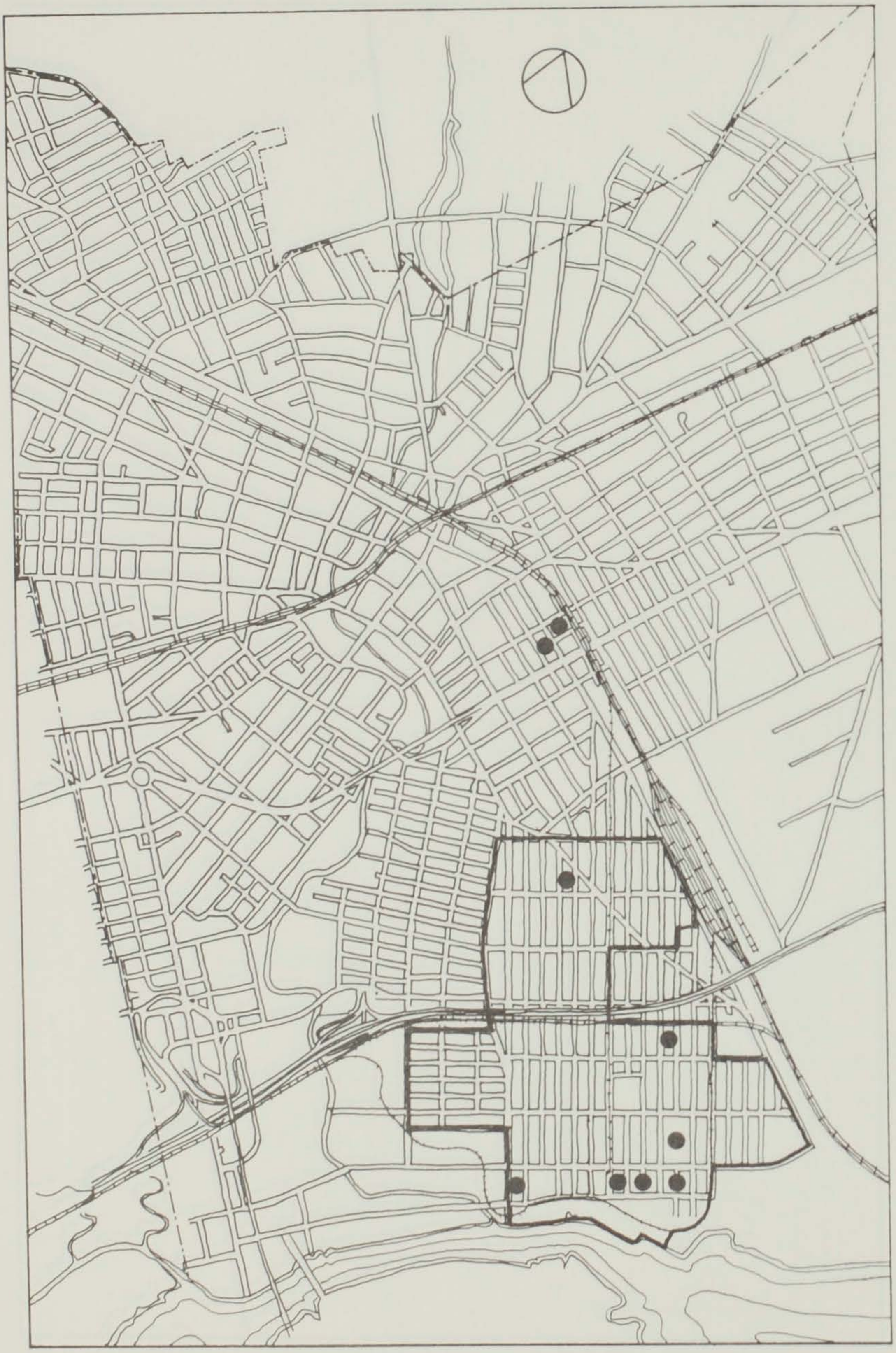


PLATE F - CRP HIGH PRIORITY ACTION AREA

CONCENTRATIONS OF WELFARE CASES - 1970 ●

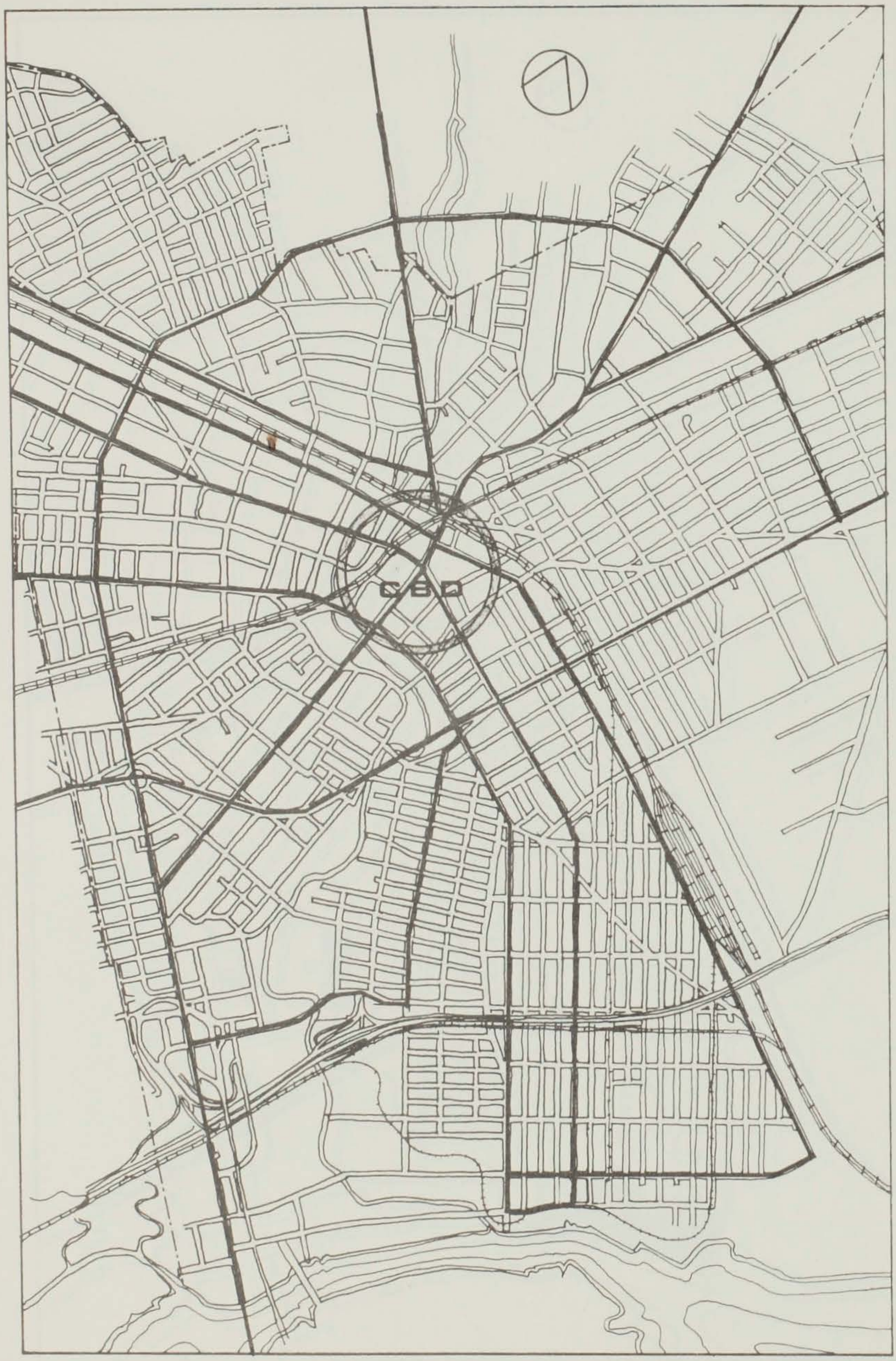


PLATE G - TRANSPORTATION

MAJOR BUS ROUTES

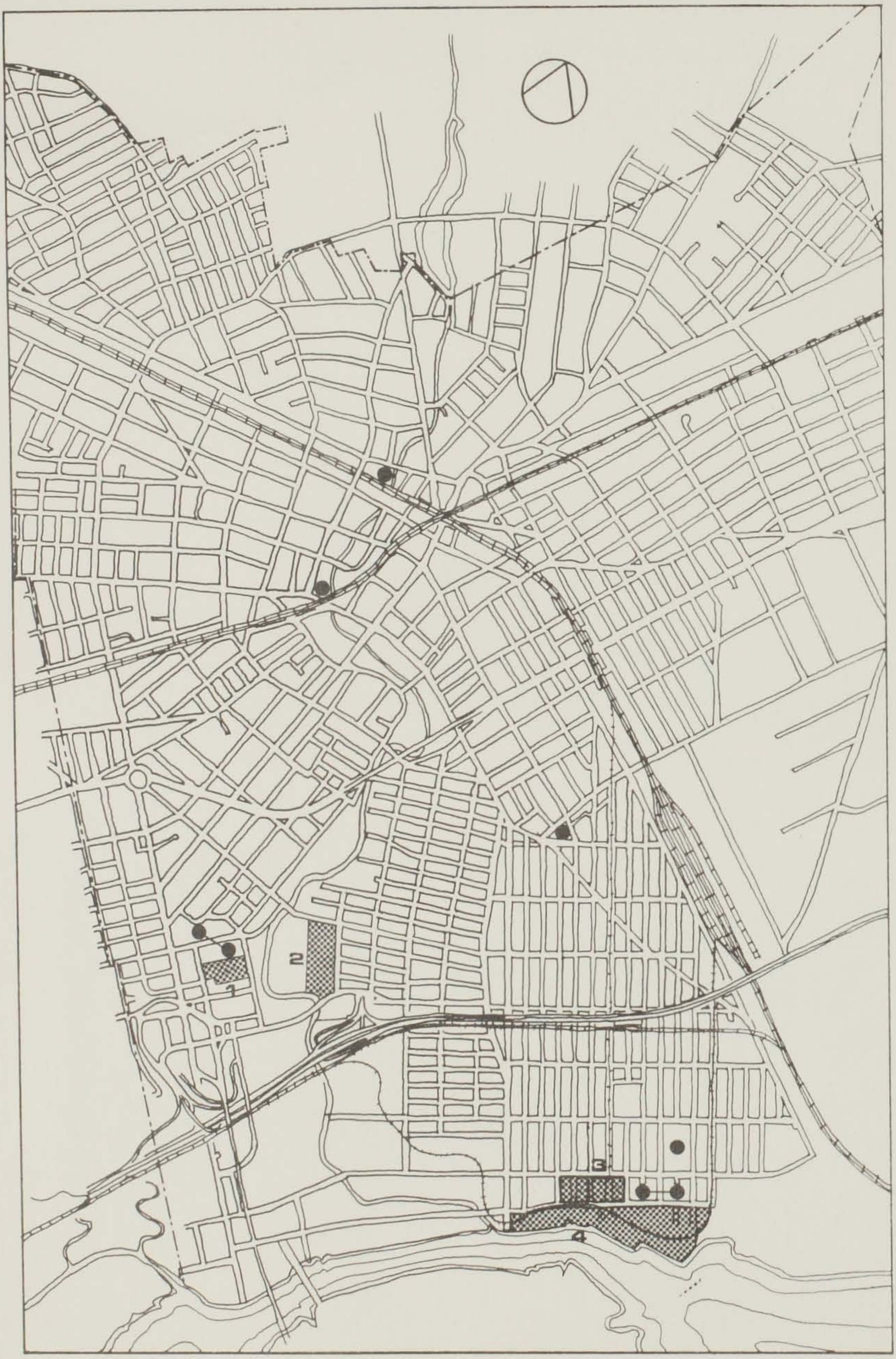


PLATE H - HOUSING IN ELIZABETH

EXISTING PUBLIC HOUSING ●

POTENTIAL HOUSING SITES ▩

BIBLIOGRAPHY

BIBLIOGRAPHY

Alexander, Christopher. Houses Generated by Patterns. Berkeley, Ca.: Center for Environmental Structure, 1969.

Bailey, James. "Case Study of a Failure." Architectural Forum, December, 1965, pp. 22-25.

Berkeley, Ellen Perry. "The Nation's Largest Low-Rise 221 (d)(3) Project." Architectural Forum, May, 1971, pp. 38-41.

_____. "Woodlawn Gardens, Chicago: Largest Low-Rise 221 (d)(3) Project in the Country." Architectural Forum, July, 1969, pp. 72-77.

Broggi, Mario. "Arbeiterwohnungen in Terni." Werk, March, 1972, pp. 140-145.

Chermayeff, Serge and Alexander, Christopher. Community and Privacy. Garden City, N.Y.: Doubleday and Company, Inc., 1963.

Cooper, Clare. "Resident Attitudes Toward the Environment at St. Francis Square." Working paper #126, University of California at Berkeley, Department of Landscape Architecture, 1971.

Davidoff, Paul; Davidoff, Linda; and Gold, Neil Newton. "Suburban Action: Advocate Planning for Open Society." Journal of the American Institute of Planners, January, 1970, pp. 12-21.

DeCarlo, G. "Cite Ouviere Matteotti." Architecture D'Aujour D' Hui, January, 1975, pp. 32-33.

Egan, M. David. Concepts in Thermal Comfort. New Orleans, La.: School of Architecture, Tulane University, 1972.

Fischer, Robert E. Architectural Engineering: Environmental Control. New York: McGraw-Hill, 1965.

"Four Vast Housing Projects for St. Louis." Architectural Record, August, 1956, pp. 182-189.

Freedman, Jonathan. Crowding and Behavior. New York: Viking Press, 1975.

Hofer, Paul. "Halen vom Bewohner Aus." Werk, February, 1963, pp. 58-71.

Hoyt, Homer. Where the Rich and the Poor People Live. Washington, D.C.: Urban Land Institute, 1966.

Jensen, Rolf. High Density Living. New York: Praeger Publishers, 1966.

McLaughlin, Herbert. "Density: The Architect's Choices and Attitudes." Architectural Record, February, 1976, pp. 95-100.

Mandelker, Daniel R. and Montgomery, Roger. Housing in America: Problems and Perspectives. Indianapolis, In.: Bobbs-Merrill Company, Inc., 1973.

Marquis, Robert B. "The Architect's Response to the Study." A.I.A. Journal, December, 1971, pp. 24-25.

Martin, Sir Leslie. "Architects' Approach to Architecture." R.I.B.A. Journal, May, 1967, pp. 191-200.

Morton, David A. "Housing: High-Rise vs. Low-Rise; Urban-Suburban." Progressive Architecture, March, 1976, pp. 48-51.

_____. "Marcus Garvey Park Village, Brooklyn." Progressive Architecture, December, 1973, pp. 60-63.

National Commission on Urban Problems. Hearings Before the National Commission on Urban Problems, Vol. 1. Washington, D.C.: Government Printing Office, 1967.

Newman, Oscar. Defensible Space. New York: Collier Books, 1973.

Ontario Association of Architects. The Environmental Services of Buildings. Toronto: Bryant Press, Ltd., 1970.

Pynoos, Jon; Schafer, Robert; and Hartman, Chester W. Housing Urban America. Chicago: Aldine Publishing Company, 1973.

Raymond and May Associates, Planning Consultants. Master Plan Report, City of Elizabeth, New Jersey: Analysis and Plan, Vol. II. White Plains, N.Y.: By the Author, 1968.

Raymond, Parish and Pine, Inc. Community Renewal Program: Technical Report for the City of Elizabeth, New Jersey. White Plains, N.Y.: By the Author, 1971.

Ross, Irwin. "Carla Hills Gives the 'Woman's Touch' a Brand New Meaning." Fortune, December, 1975, pp. 120-123, 158-164.

Ryder, Sharon L. "Housing: High-Rise vs. Low-Rise; Upstairs, Downstairs." Progressive Architecture, March, 1976, pp. 40-41.

Safdie, Moshe. Beyond Habitat. Cambridge, Mass.: M.I.T. Press, 1970.

Schafer, Roger. "The Happy Householders of Halen." Architectural Forum, June, 1966, pp. 80-85.

"Slum Surgery in St. Louis." Architectural Forum, April, 1951, pp. 128-135.

Sommer, Robert. Personal Space. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969.

State of New Jersey, Department of Community Affairs. Basic Code: Standard Building Code of New Jersey. Trenton: N.J. Dept. of Community Affairs, 1974.

The Housing Authority of the City of Elizabeth, New Jersey. After 25 Years, the Housing Authority of Elizabeth, New Jersey Still Looks Ahead. Elizabeth, N.J.: By the Author, 1964.

The Institute for Architecture and Urban Studies, Museum of Modern Art. Another Chance for Housing: Low-Rise Alternatives. New York: Museum of Modern Art, 1973.

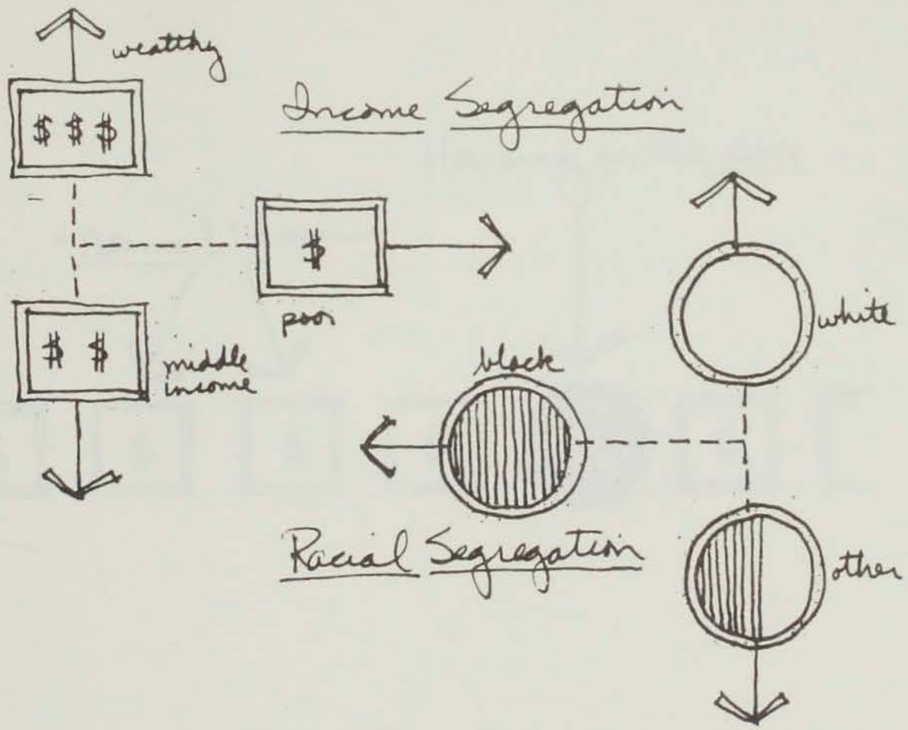
"The 1964 A.I.A. Honor Awards: Merit-Marquis and Stoller." A.I.A. Journal, July, 1964, p. 34.

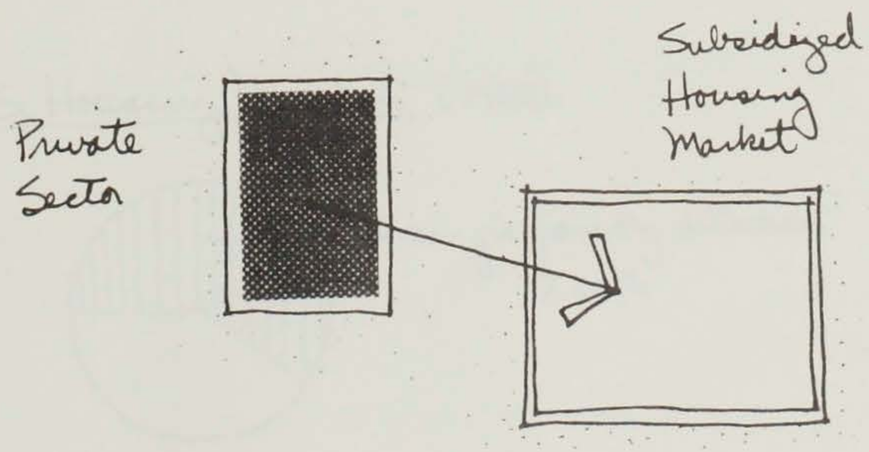
U.S. Department of Housing and Urban Development. Housing and Urban Development: Minimum Property Standards - Multi-Family Housing. Washington, D.C.: Government Printing Office, 1973.

74

T. 55
8-5

53





FHA discouraged the guaranteeing of mortgages in areas that held both blacks and whites. This policy followed local discriminatory practices.

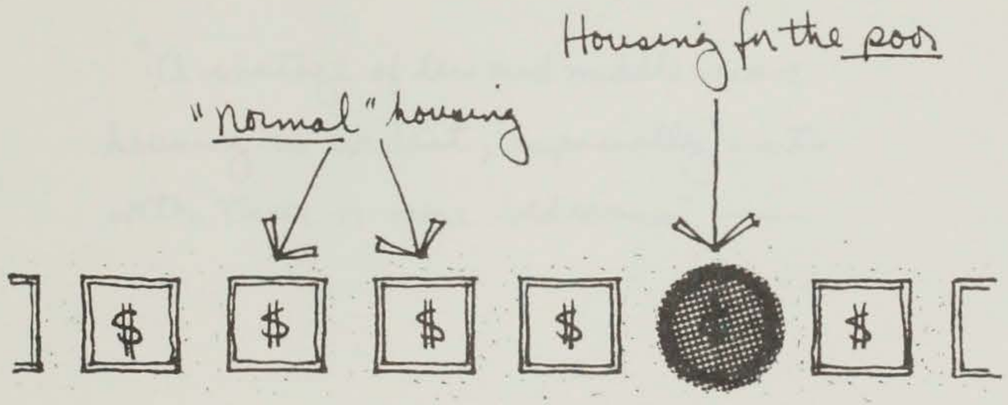
Other various restrictions and regulations have resulted in income-segregated communities. People with one income live here, another income group lives there, and yet another income group in another location. Racial and family-type segregation also occur with minority groups being separated from whites as well as families with social problems being separated from "normal" families. The regulations result in concentrations of these problem cases" causing other families to shun the development. (Housing Urban America, "The Bias of American Housing Policy".)

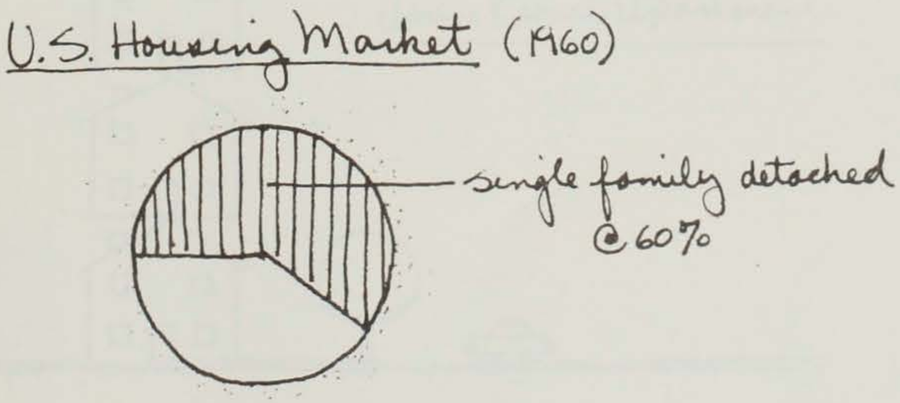
Other problems include siting in poor neighborhoods, poor and restrictive administration of the units and the separate, institutional and deviant form of architecture is taken on by the buildings. The most attractive housing to the public housing resident is one which best approximates the design of the surrounding buildings. Minimum standards which, due to economics, have become the norm, make the units far from spacious.

The Urban Land Institute has outlined three major areas of concentration to improve the situation. They include:

1. Income assistance for housing users.
2. Encouragement of improved housing management.
3. Support for expanding housing production.

Greater involvement of the private sector has been advocated. This would result, hopefully, in better conditions by improving motivation and jurisdiction - if incentives are supplied, the private sector will produce. (Housing Urban America, "The Private Sector and Community Development: A Cautious Proposal"). A move towards





home-ownership and tenant cooperation is thought to be a good one. The idea of self-pride and personal identity should increase efforts toward the care of the individual unit as well as the entire project. (Housing Urban America, "Section 235 of the National Housing Act: Home Ownership for Low-Income Families").

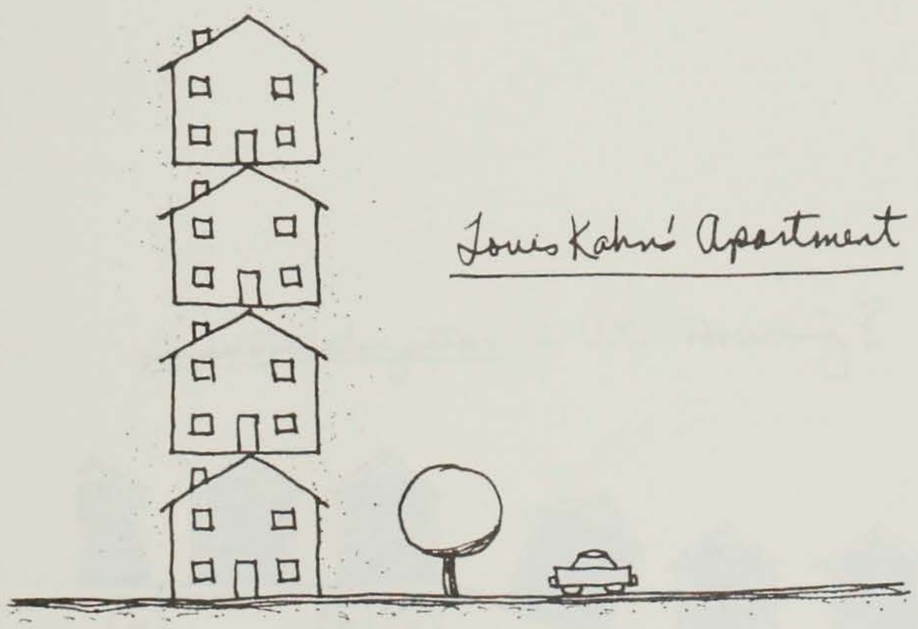
Many people feel that if you can build cheaper housing which is good for low-income people, it will be used by middle and high income people. In the nations of northwestern Europe, the housing for the poor is in effect, the housing that most people live in - it is not marked by any stigma of deviance. (Beyond Habitat and Housing Urban America, "The Bias of American Housing Policy").

Summary

In 1970, the nation had an estimated 7 million sub-standard units compared with 11 million in 1960 and 17 million in 1950. With the growing population it is said that new housing production must equal the net increase in new households plus the number of units removed from the stock. However, rapidly increasing costs for land and site development have, in many instances, resulted in a cheaper product when builders have tried to cut costs in order to realize higher returns. Another problem is that inequities in the federal income tax structure and primitive zoning and building regulations have been exploited by many people including real estate operators and "spec" builders. The results have been sub-par designs and shabby construction.

The U.S. housing market has always been dominated by single-family detached houses. This is true even in today's metropolitan areas - in 1960 about 60% of all housing was in single-family detached units. This bias in favor of owner-occupied, single-family, free standing houses with bits of land around them has become a major constraint on housing policy in the U.S. Since their inceptions,

"A shortage of low and middle income housing is evident, especially units with three or more bedrooms." ——



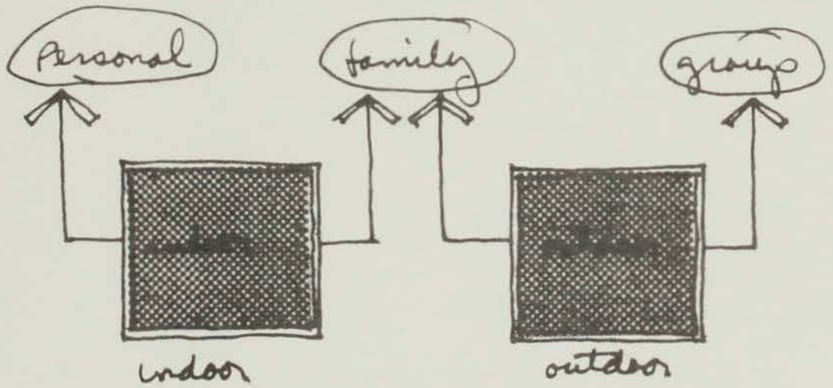
Louis Kahn's Apartment

local and federal housing policies have been dedicated to the single-family home through zoning regulations, building and health codes, and insurance of home mortgages on the federal level.

Carl Koch, a pioneer in the residential field, found difficulty in changing existing, outdated municipal building codes as a hindrance to the design of multi-family housing. (Progressive Architecture, Oct. 1961; "Thoughts on Urban Housing: Non-Architecture"). He considered the FHA as second, and restrictive labor practices as third in the list of deterrents. A federal unified building code would be helpful providing it was frequently updated. (Beyond Habitat and Defensible Space).

A shortage of low and middle income housing is evident, especially units with three or more bedrooms. A method of combating this situation directly has been suggested by many in the form of extensive rehabilitation of existing housing. An opposite line of attack has been tried in the form of urban renewal which has been labeled as "Negro Removal" and a "de-housing program" for the poor. (Housing Urban America, "Social Class and Housing Reform"). Possibly, if the framework of the city had been set up so that increased density could be added to earlier construction, these problems would not exist, or if they did, they would certainly be lessened. (Beyond Habitat).

Much of the criticism of multi-family housing lies in the design of the individual dwelling unit. In designing houses, architects have tended to create spaces freeing occupants from the "four wall" space and mass concept. The design of apartments has been different, however - very rigid and enclosing. Louis Kahn has suggested that an apartment is nothing but a house upon a house upon a house. Why should it be different from a detached house? (Progressive Architecture, Oct. 1961; "Thoughts on Urban Housing: New Blues and New Trends").

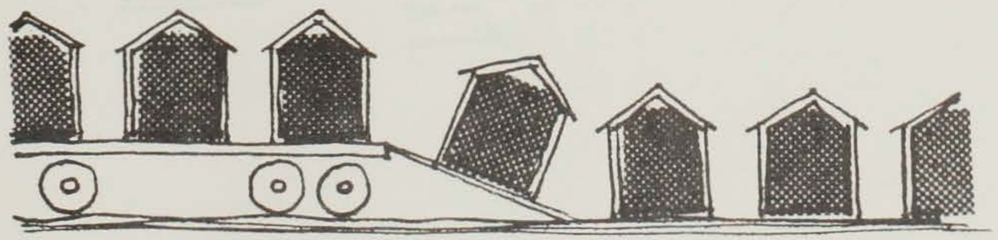


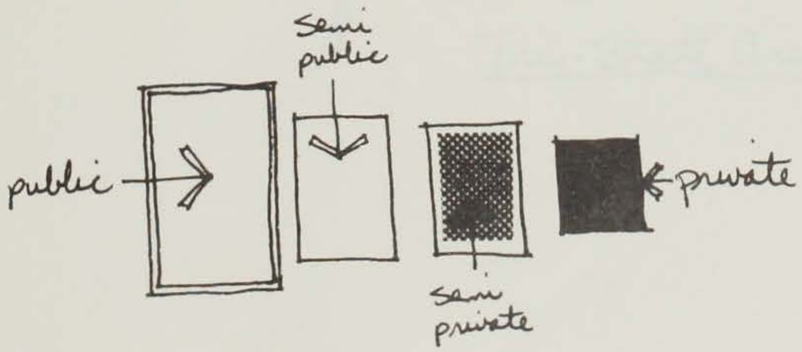
A major weakness has been in the areas of private and public domain, and hierarchy of spaces. Several apartment projects have failed because their designers had shown little concern for this aspect of housing design. (Community and Privacy and Defensible Space). Allocation of huge "public spaces" has often proven disastrous as has the lack of unit identity. Many people want both the intensive meeting place filled with activity, and the secluded open space. (Beyond Habitat). The trick is to offer both within a relatively small area and have each function properly. Several authorities feel that until the dwelling assumes greater importance to a family, more imaginative solutions to housing problems will not be found.

The Future

It will be necessary for future housing to benefit from the failures of the past. Much has been discovered in the areas of sociological and psychological influences on design of housing. Weaknesses in existing codes and regulations should be corrected and perhaps a more standard approach to the design of future codes should be sought. Perhaps the biggest change will, and should, come in the construction of housing. Industrialization of housing production should be one of the highest priorities of HUD. It is hoped that, among other benefits, this would result in lower costs. The Russians have done considerable work in the direction of mass produced housing and, as a matter of fact, over 40% of all multi-family housing in Britain, France and Russia is built using industrialized systems techniques. The trouble in this country has been that people link mass production with monotony, discouraging the industrialist from going into mass produced housing. Moshe Safdie, a pioneer of sorts in this field, feels that dissection into space cells is going to be the single most important change in the building process in the next twenty or thirty years. He also feels that the set-up in which the architect is independent of the manufacturing process is totally obsolete. He says that the highest form of organization could mean the least standardization and that technology could make industry as flexible as nature. (Beyond Habitat).

Industrialization in U.S. Housing?





Conclusions

1. More housing is needed for low and moderate income families.

2. Greater subsidization of moderate income level families, as opposed to lower income families, will occur.

3. Better design, and siting, of publicly supported housing is needed.

4. Less restrictive administration of this housing is necessary.

5. A move toward home ownership and tenant cooperation is likely.

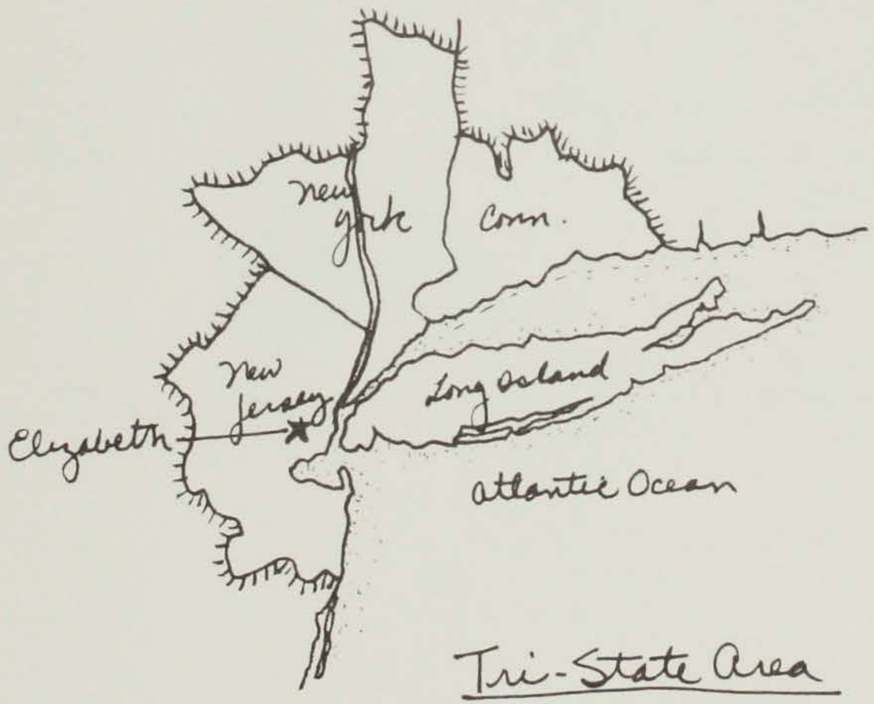
6. Zoning regulations and building codes are often outdated and lack uniformity. These conditions must be remedied.

7. A major constraint on U.S. housing policy has been the bias in favor of owner-occupied, single-family, free-standing houses.

8. Rehabilitation of existing housing will increase.

9. The industrialization of housing construction techniques will be evident in the future.

10. A more defined hierarchy of space will need to be included in future housing design (private, semi-private, public, etc.).



Tri-State Area

1.3 THE REGION

Introduction

This section offers a general description of the housing situation in the New York Metropolitan Area, which contains the city of Elizabeth, New Jersey. Certain key figures are presented to give a picture of past and present conditions, and a planning strategy dictates the methods of approaching the problems in the future.

Summary

The New York Metropolitan Area, containing parts of New York, New Jersey and Connecticut, contains nearly one-tenth of the nation's population. As a result, this area serves as an important barometer indicating current trends and directions of urban housing.

Currently the region contains about 6.5 million dwelling units suitable for year round occupancy. In order to accomodate the expected growth of the region's households, and to achieve a minimum vacancy rate of 4%, the total number of dwelling units must increase by about 165,000 a year to reach 8.1 million by 1985. Of the existing 6.5 millions dwellings, almost 1 million are substandard and about 20% of these are dilapidated (not fit to live in.) About 3 million people live in substandard housing. (Tri-State Regional Planning Commission).

In 1960, about 18% of the units authorized outside of New York City were multi-family. By the mid 1960's this figure had reached about 35%, and by the early 1970's the figure stood at around 44%. (Tri-State Regional Planning Commission.)

The Future

Much of the above information was obtained from the Tri-State Regional Planning Commission which has formulated an approach to

future residential development in the region. This regional strategy is as follows:

1. Reinforce with housing those areas designated for urban development.

2. Build new housing on vacant sites or surplus lands, and in completely deteriorated areas.

3. Blend housing types to fit the population characteristics.

4. Invest enough to repair and maintain old housing, with resident participation, until new replacements are built.

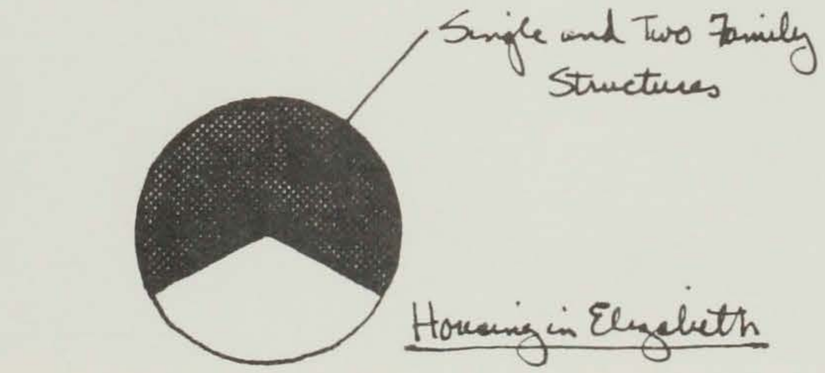
5. Increase government support to help private building and private ownership of houses and apartments.

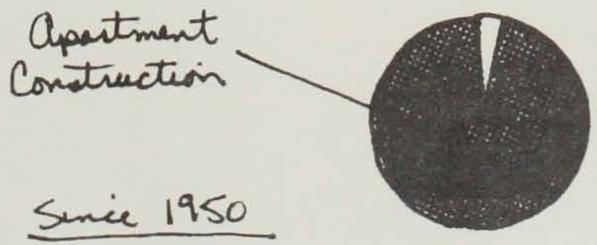
6. Build well for the future - in anticipation of higher standards.

7. Build more low-rise in the suburbs, since it costs less.

8. Use factory built houses that are above minimum standards.

9. Subsidize housing units and residents with housing funds.





1.4 THE CITY

Introduction

The following pages offer a concise look at the housing situation as it exists in Elizabeth today. Also included is a description of two programs operating in the city, and a brief analysis of one of the town's most blighted areas. This section will be useful in setting up a program, as well as locating potential sites for housing development.

Summary

Single and two-family structures make up almost two-thirds of all housing in Elizabeth, with two, three, and four-family structures forming approximately two-fifths of all units. Construction of housing units in these categories is virtually non-existent today, however, with apartments making up most of the recent construction. As a matter of fact, it is expected that many single family residences located in the same blocks as other types of housing will be pressured into eventual removal to allow room for apartments.

Since the early 1950's, apartment construction rose to make up about 90% of all housing units constructed. A great deal of this apartment construction was in the form of garden apartments, no more than four stories high.

Using the Penn Central Railroad line as a division, over 4,500 housing units were built in areas west of the tracks between 1960 and 1966. This compares to 2,000 units in the eastern portion of the city. The western section of the city had less housing than the eastern portion according to 1960 census figures (15,755 vs. 19,390 units), and contained 77% of all new housing units constructed from 1940 to 1960. All 1,196 high-rise units built from 1960 to 1966 were located in western Elizabeth.

North Elizabeth was the neighborhood with the most active housing construction, and the greatest increase in population in the 1940's and 1950's. Elizabethport and Peterstown showed a 15% population loss and the least amount of construction. Bayway had the largest gain in new housing of any neighborhood in eastern Elizabeth with 1,117 units from 1940 to 1960, and the smallest percentage of sub-standard units. Elizabethport lost the most population and housing units from 1940 to 1960 of any neighborhood in the city. Keighry Head was the only other neighborhood to lose population between 1940 and 1960.

(Note: the above information was obtained from the Master Plan Report, City of Elizabeth, N.J.)

Community Renewal Program

Based on the findings of a 1971 study a proposal was made to the City of Elizabeth to formulate a program to deal with the various problems and deficiencies which existed in the physical nature of the city. A Community Renewal Program was offered to the city by the planning firm of Raymond, Parrish & Pine, Inc., the group who did the 1971 study. This program was geared toward improving the blighted conditions which were evident in certain sections of the city, as well as offering recommendations intended to remedy the entire city's lack of sufficient housing and community activity areas.

Recommendations included in this program were the construction of scattered site elderly housing throughout the city at the rate of about 100 units per year over the following five years, and the establishment of a non-profit housing corporation designed to handle the financing, construction, and administration of additional units. The production rate for this construction should also be about 100 units per year for the following five years. Also to be included was the establishment of a program aimed at the construction of FHA 235 and FHA 236 family housing stressing home ownership.

A production rate of 200 units per year over the following five years was suggested.

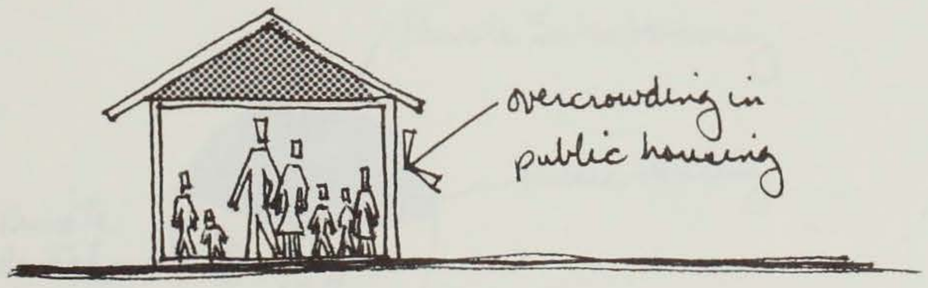
The utilization of the Urban Renewal Program as well as a Code Enforcement Program was suggested for improvement of several areas in the high priority study areas.

(Note: the information in this section was obtained from the Community Renewal Program: Technical Report.)

High Priority Study Areas

Based on a windshield survey taken by representatives of Raymond, Parrish & Pine, Inc., certain areas were designated as needing immediate improvement. Once these areas were chosen, a further, more detailed study was undertaken. The sections found to have the greatest deficiencies in housing, and a number of major environmental problems, were designated as high priority study areas. Some of the environmental problems suffered by these areas include the twelve lane New Jersey Turnpike and the Central Railroad of New Jersey which cut through the areas creating both noise and pollution problems. These problems are magnified by the presence of Newark Airport which is less than three miles away and has flight paths directly overhead. Various incompatible industrial concentrations also create pollution problems as well as provide eyesores.

These high priority study areas are generally made up of one and two-family detached houses on small lots. The street layout is basically a gridiron and the largest concentrations of commercial use are on First Street, Third Street, Fifth Street and Elizabeth Avenue. There are quite a few vacant stores and small scale commercial establishments in the area and only one major supermarket. Several superblocks are contained within the gridiron layout including Jackson Park, New School #1, Pioneer Homes, Migliore Manor, and Brophy Field.



Public Housing in Elizabeth

Public housing in Elizabeth is under the control of the Housing Authority of the City of Elizabeth. The Authority was established in 1938 in accordance with state legislation adopted to implement the U.S. Housing Act of 1937.

The Elizabeth Housing Authority operates a total of 1,568 dwelling units of low-rent public housing contained within six projects. A 1970 estimate put the number of residents living in these projects at about 5,000, about 4% of the city's entire population. Of these 1,568 units, about 501 were designed specifically for the elderly. Records show that in 1970, the waiting list for these apartments included nearly 1,000 applicants. Over 70% of these applications were for elderly housing. The Housing Authority presently has an application pending with the federal government requesting 600 additional units. (The Master Plan Report).

The Authority has had several management problems with regards to the administration of its public housing projects. Most of these problems are exemplified in the physical condition and appearance of the projects, especially that of Migliore Manor. The grounds are covered with garbage and broken glass. Broken windows, lights, and doorways, inadequate recreational facilities, and rising rents add to the blighted condition. Another major problem is the lack of units that are suitable for large families as well as a general need for additional housing for low-income families. (After 25 Years the Housing Authority of Elizabeth, N.J. Still Looks Ahead).

Social Need

As had been mentioned earlier, present multi-family housing in Elizabeth is proving to be inadequate, both in numbers and in quality. This situation holds true particularly for those families whose income limit them to public housing. The situation, as far

as quality housing is concerned, is not quite as critical for the elderly due to the construction of two projects within the last decade. However, the waiting lists are long, and more units would help to alleviate this problem.

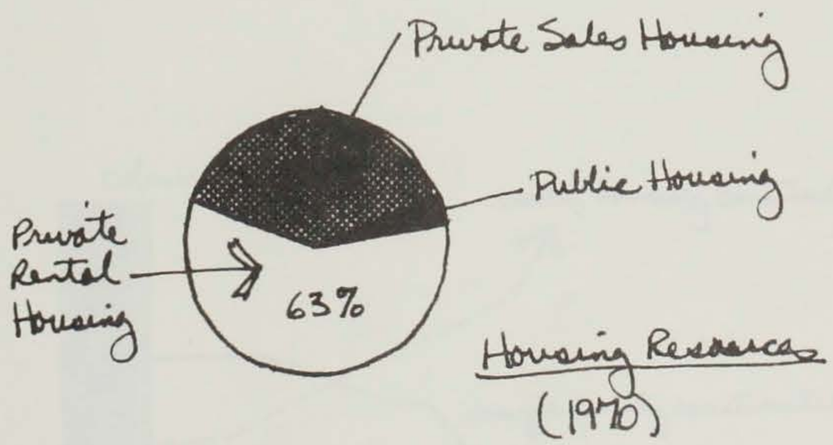
Additional effort needs to be made in the direction of general improvements within several parts of the city. New housing would not only add to the present supply, but it could be used as a tool to remove existing dilapidated structures as well as being a catalyst in the effort to clean up many of the city's blighted areas. Presently, these areas serve as eyesores, safety hazards, and unsanitary gathering places for children and adults.

Existing Housing Resources in Elizabeth

A study of the existing housing resources in Elizabeth was made (Community Renewal Program: Technical Report) based on the following breakdown:

1. Private Sales Housing - This category includes single family detached dwellings and two-family houses. According to the 1960 census about 38% of the housing units in Elizabeth were owner-occupied, but by 1970 this figure had dropped to 32%.

2. Private Rental Housing - This category includes all those rental units produced without government subsidy. According to the 1960 census about 59% of the housing units in Elizabeth fell in this category, but by 1970 this figure had climbed to 63%. The great majority of these units (97%) were built before 1967.



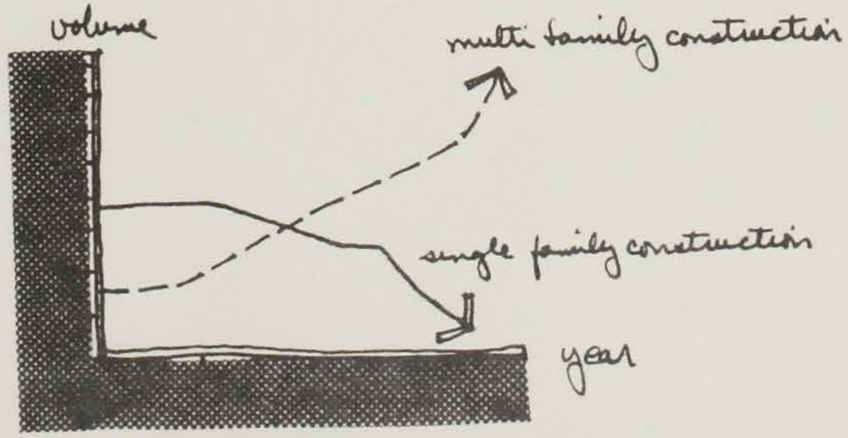
3. Moderate Income Private Rental and Cooperative Housing - This category includes only one housing development in Elizabeth, the Elizabeth Center Apartments, which were built under the 221(d)(3) program in 1967. Housing of this type is intended to fill the needs of those families whose incomes are above the limits for public housing but cannot afford housing on the conventional market. The tenants must be recertified every two years in order to be eligible for continued occupancy. This housing is privately built, owned and managed.

4. Low-Rent Public Housing - This category of housing is designed to provide housing for families and the elderly who cannot afford adequate housing available on the private market. There are 1568 units of this type available, located in six projects managed by the Elizabeth Housing Authority. Three of these projects are designed specifically for the elderly; however, the waiting list is long. The Housing Authority has applied to HUD for 600 additional units.

The Future

Since the majority of recent residential construction has been comprised of multi-family structures, this trend will most likely continue in the near future. Obviously, apartment construction offers the only possibility for rebuilding old, rundown residential areas without decreasing the overall housing supply.

While there is a need for improvement in the area of housing in Elizabeth, it is obvious that this improvement alone will not remedy all of the city's problems - it will only be a step in the right direction. Improvements need to be made in the areas of mass transportation, community services, recreational facilities, and many others. Certainly some of these aspects could be considered and incorporated into any future schemes for housing development.



1.5 PROBLEM DEFINITION AND SPECIFIC NEED

A shortage of reasonably priced, adequate dwelling units exists for low and moderate income families in Elizabeth. This is particularly true for those groups with large families. Within the public housing structure (the only type of housing many of these families can afford) there are only 233 three-bedroom units, 45 four-bedroom units, no five-bedroom units, and 3 six-bedroom units. (Community Renewal Program: Technical Report). An added problem is that the majority of these public housing units are over 30 years old, and are therefore failing to adequately meet many of the needs of today's society. The need for more apartments is not relegated solely to the needs of public housing candidates, however. According to an extensive study done by Raymond & May Associates, apartments would have a market in a growing section of Elizabeth's population - young married couples and older age groups who do not require single family residences. (The Master Plan). Therefore, additional units of one and two bedrooms would be in order.

In addition to the shortage of housing units, several sections of the city are in need of other improvements. Many blocks contain concentrations of deficient structures which need to be repaired or razed. A shortage of adequate community services and facilities in many of these areas contributes to the lack of "neighborhood identity" which is often present in many urban areas.

Another problem facing the City of Elizabeth is the lack of sufficient open recreational areas (in the form of parks) available to the entire population.

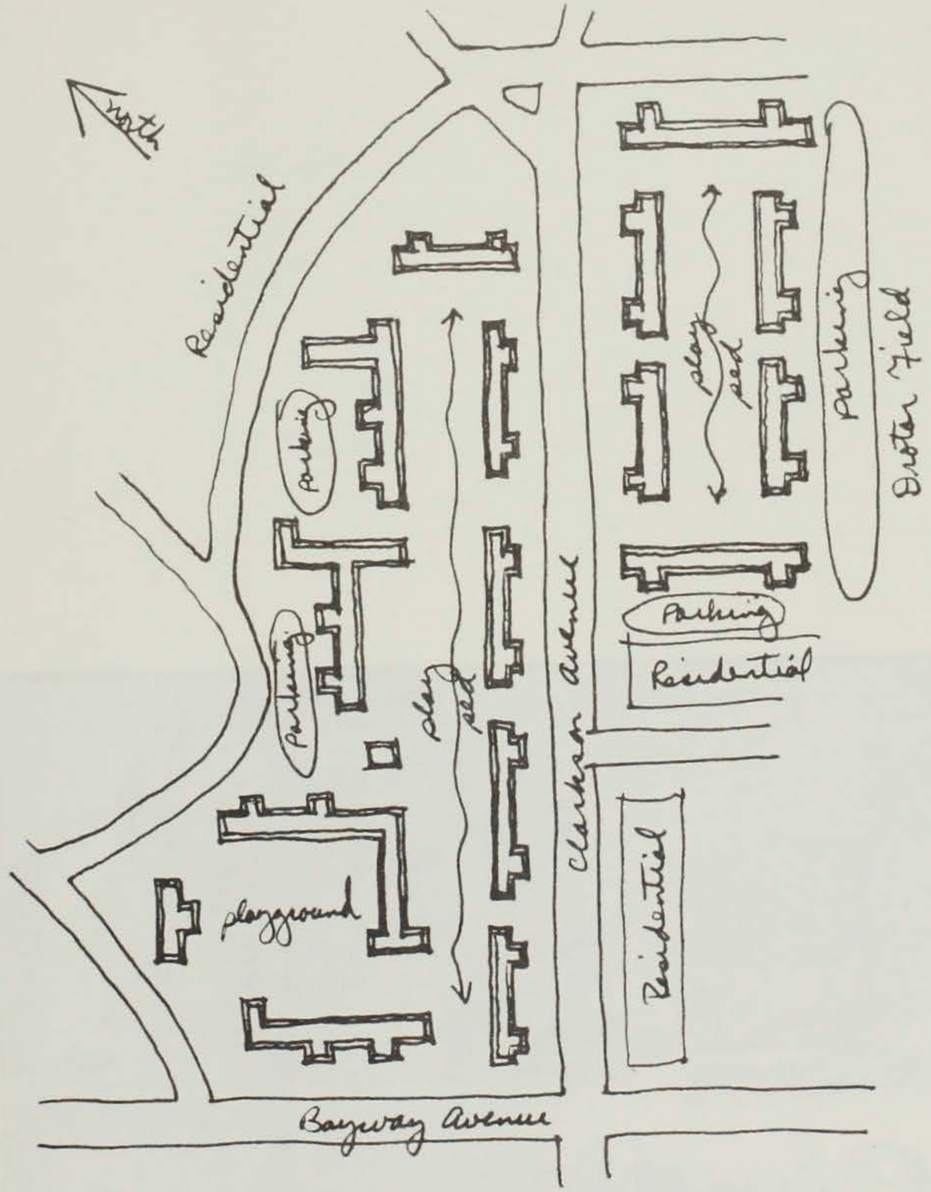
1.6 CASE STUDIES

Introduction

In an effort to better understand the needs of people who live in high-density, multi-family developments, several case studies will be analyzed. It is important that these case studies bear some relation to the problem at hand, whether it be the scale of the development or in the people who inhabit it. It is believed that much can be learned from the evaluation of the following case studies, and more importantly, this knowledge can be applied to the search for a solution to the problem as it exists in Elizabeth. The format used for these studies was developed by Christopher Alexander and Serge Chermayeff (Community and Privacy).

Upon completion of the case studies a comparative evaluation of the design solutions will be presented using the criteria developed by the Urban Development Corporation (UDC) for the design of housing. The major categories of consideration are as follows:

1. Community
2. Child Supervision
3. Security/Maintenance
4. Livability
5. Response to Context



Mravlag Manor

Architect:	Pohlman, Poggi, Keimig & Dennis
Location:	Elizabeth, New Jersey
Housing Type:	Low-rise, high-density
Completion Date:	1940

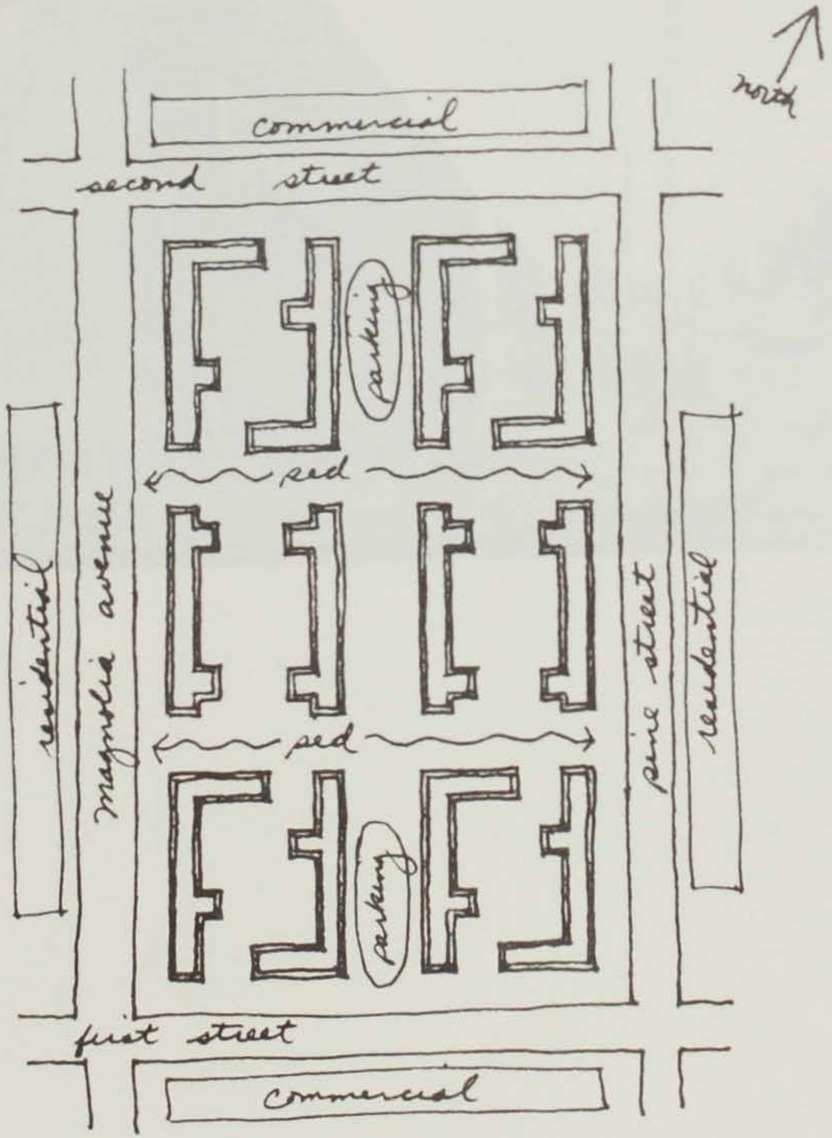
Site: Located on a fifteen acre site on the fringe of a residential area which contains mostly one and two family homes. The site is bordered by Bayway Avenue, a busy artery leading to the Goethals Bridge, a large open playfield, and private residences on the remaining side. The development is bisected by Clarkson Avenue which runs through the site.

Concept: The development is generally inward focusing with none of the dwelling units opening directly onto the street. The interior courtyards are intended to serve as community areas. Parking is on the perimeter of the development.

Data: Mravlag Manor, located in the Bayway section, is a series of 15 masonry buildings. In addition to the housing structures, each three stories, there is a one-story administration office. The buildings occupy four of the site's fifteen acres. There are playgrounds, clothes drying yards and a large playfield known as Drotar Field. Of the 423 apartments, 117 have one bedroom, 258 have two bedrooms, and 48 have three bedrooms. The administration building contains management offices, maintenance headquarters, community activities center and library. The density is about 50 units/acre. About 94% of the households are white and 6% are black.

Evaluation:

This is the better looking of the three Elizabeth public housing projects under consideration. This is probably due to several factors including the people living in it, and its location in the city. The surrounding neighborhood is in much better condition than that which includes the other two projects. Also, until the recent construction of two public housing developments for the elderly, quite a few of these people lived in Mravlag Manor. This meant that there were fewer children which resulted in better kept grounds. There are several criticisms of the project, however. The nature of the site layout does not relate well to the large playfield which is part of the development. Also, the interior courtyards lack the presence of any activity which could stimulate group interaction. The open blacktop areas had obviously been grass areas at one time, but the abuse generated by a lack of controlled recreation called for the resurfacing. The clothes drying yards on the perimeter of the development are located poorly in terms of convenience to the residents. There seems to be adequate parking area in the lots provided and some on the street parking is available also. The presence of Clarkson Avenue cuts off the large playfield from the majority of the development. The presence of a bus stop adjacent to the development on Bayway Avenue is convenient, especially to the elderly who generally must rely on mass transit more than others. In general, the development is typical of public housing done in the 1940's in that its character sets it apart from the other residences in the area, although the scale of the development, in terms of number of units and height of buildings, seems to work



well within the neighborhood. There is very little space within the development that allows any form of privacy or semi-privacy with the exception of the interior of the units themselves.

References: After 25 Years the Housing Authority of Elizabeth New Jersey Still Looks Ahead and Community Renewal Program: Technical Report.

Pioneer Homes

Architect: Pohlman, Poggi, Keimig & Dennis
Location: Elizabeth, New Jersey
Housing Type: Low-rise, high-density
Completion Date 1940

Site: Located on an eight and one-half acre site which is surrounded by old multi-family residential structures and some light commercial. The site was originally two blocks which have been connected to form somewhat of a "super block".

Concept: The development is generally inward focusing with few of the living units opening directly onto the surrounding streets. The street which was removed was replaced by two parking lots which are entered from the perimeter parking to the north and south. The remaining parking is on the street. The interior courtyards are intended to serve as community activity areas.

Data: Pioneer Homes, located in the Elizabethport section, contains 12 masonry buildings, each of three stories. Of the 397 apartments, 72 have one bedroom, 269 have two bedrooms, 48 have three bedrooms, and 8 have four bedrooms. The

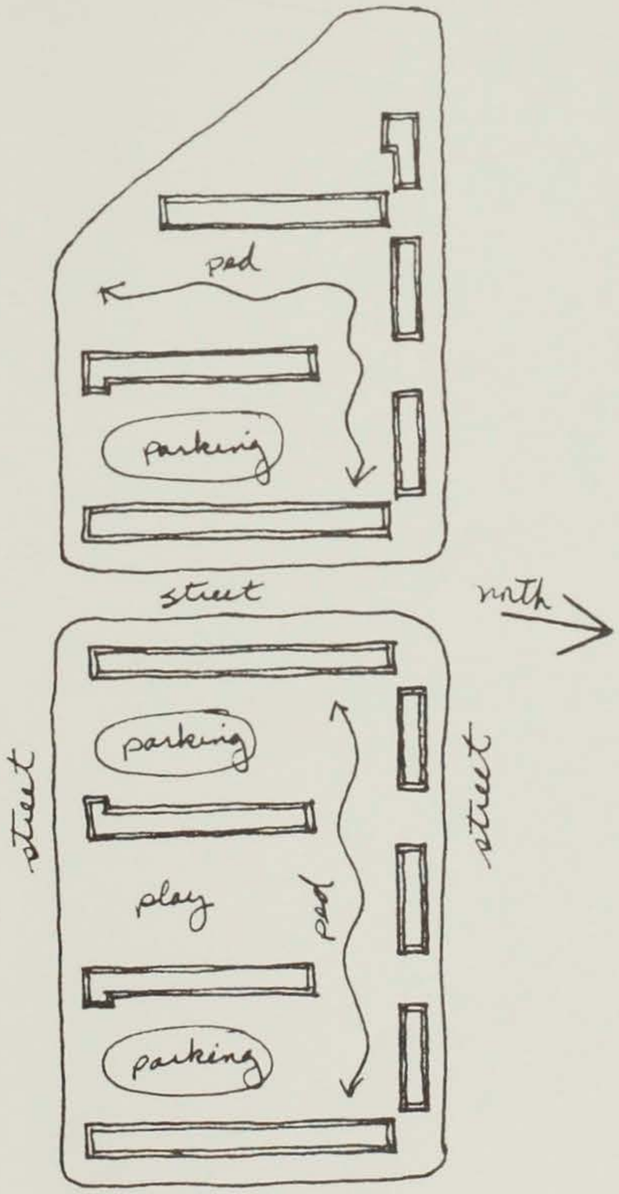
buildings occupy three of the site's eight and one-half acres. There are recreation facilities and clothes drying areas. The office is in a building which also has a maintenance department and a community activities room. The density is about 50 units/acre. About 80% of the households are black and 20% are non-black.

Evaluation:

This project was built at the same time as Mravlag Manor, but it looks years older. Once again, much of what was once grass has been covered with blacktop. Very little is offered in the form of recreation for the children or teenagers. The nature of the site layout once again creates a barrier between the development and the existing residences in the neighborhood. The parking areas are relatively small and the perimeter streets seem to offer very little to remedy the situation. Also, the relation of the parking to the unit entrances seems to lack convenience. The lots are situated so that they can be easily observed from several windows of the surrounding apartments. The presence of light commercial activity across the street is convenient to the residents, but more variety is needed. There is a definite lack of living units with more than two bedrooms. Several of the apartments are overcrowded and this condition is reflected in the overall appearance of the development. Once again, the greatest fault with the project is the site layout and site development.

References:

After 25 Years the Housing Authority of Elizabeth, N.J. Still Looks Ahead and Community Renewal Program: Technical Report.



North Beach Place

Architect:	Gutterson and Born
Location:	Northeast section of San Francisco, California
Housing Type:	Low-rise, high-density
Completion Date:	1953

Site: A predominantly low-income area which includes some warehouses and industrial buildings.

Concept: The main design objective seems to have been the provision of various surveillance devices for both the unit and the automobile. Reinforcement of the existing street layout as well as a strong definition of private domain in certain areas also seems to have been a major objective.

Data: The project contains 229 units on a 4.6 acre site. It was designed as public housing. It is almost an exact replica of the late 1920's working class housing prototype built in Europe. The project is a three-story walk-up, at a density of 50 du/acre, and consists of slabs of buildings grouped around common courtyards in a horseshoe configuration. These courtyards are used alternately for parking and play areas. Open stairways provide access to the upper levels and the apartments on these levels are reached via single loaded exterior corridors. All ground floor units are entered from the common courtyards, except those units fronting Bay Street.

Evaluation: The open corridors face each other across a common entry court and parking area providing surveillance. The stairtowers define the gateway

to the courts, symbolizing the project's restricted use. The play areas work out poorly as no units open directly into these courts. A number of devices (low wall, paving change, steps, etc.) have been used to differentiate between public and semi-private domain on Bay Street.

References: Defensible Space, Newman; Collier Books, 1973.

Pruitt-Igoe

Architect: Hellmuth, Yamasaki, and Feinweber
Location: St. Louis, Missouri
Housing Type: Medium-rise, high-density
Completion Date: 1955

Site: Located only a few blocks from the downtown core on a site previously occupied by slum dwellings. The surrounding area remained in its slum condition.

Concept: To build vertically, doubling the existing density while freeing some ground for public use. Open galleries on every other level would create "vertical neighborhoods".

Data: The original site plan called for 33 eleven-story slab type buildings spread over the 57 acre site in six rows, basically following the existing street layout to take advantage of existing utilities. A park was to have been spread throughout the development, making a public recreation area for both residents and non-residents. The minimum distance between the buildings was 200 ft. This included the parking

areas as well as the park. Cutbacks were ordered and little landscaping was actually done.

The total number of units was 2,800, housing approximately 12,000 people. The breakdown of these units was to be as follows: 24% one-bedroom, 42% two-bedroom, 29% three-bedroom, and 5% four and five-bedroom. The rents varied from $16 to $47 per month for families with under $3,100 annual income. The total project cost was predicted to have been near $60 million including land. This would have worked out to about $12,500 per unit. Additional facilities within the development included an interior play area, 11 ft. X 85 ft., which was called a gallery. Working off these galleries was a laundry room (one washer and dryer per floor), two drying yards, and a storage room for tools, bikes, etc. The gallery was to act as a multi-functional space such as an open air hallway, and a porch in the spring, summer and autumn. The gallery opening was to be fenced completely with steel weave for safety, but cutbacks delayed this action. Twenty families would use each gallery.

Evaluation:

Upon examining Pruitt-Igoe in 1965, ten years after its completion, it was found to be an apparent flop. Several cutbacks had been ordered before construction began, and these only added to the magnitude of the overall disaster. These cutbacks included elimination of most of the landscaping, as well as elimination of insulation on exposed steam pipes, screening on gallery windows, which resulted in three children falling out, and elimination of public toilets on ground floors.

An inspection of the development also found these problems:

1. Nearly one-third vacant.

2. Many shattered windows.

3. Vast open expanses of scrubby grass, broken glass and litter.

4. Undersized elevators were battered and reeked of urine.

5. Skipstop elevators offered setting for crimes such as muggings, rapes, and robberies.

6. Stairwells, only means of access to most of the apartments, were scrawled with obscenities.

7. Entrance breezeways became hang-outs for teens.

8. Children play in galleries, but are unsupervised and play rough and noisy games.

9. Adjoining laundry rooms were unsafe and little used.

10. Storage rooms had been robbed so often they were emptied and kept locked.

The project's lack of public and commercial activities was criticized. There was nothing for kids to do. As a result, they turned to vandalism and other crimes. Another reason for this

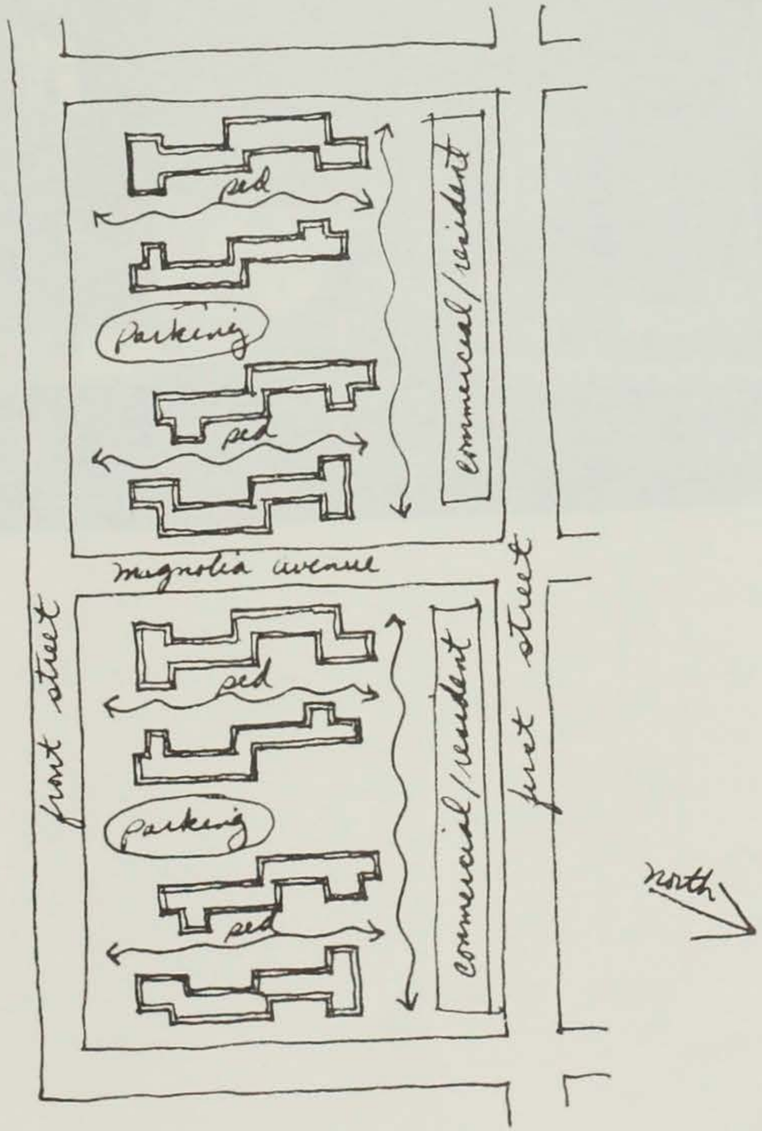
has been blamed on the fact that out of 10,736 tenants, there were only 990 adult males. Most of the tenants received welfare payments which were higher if there was no adult male in the family. The median income of the project's families was only $2,300.

The open spaces served as barriers rather than parks. There was no separation of space where tenants could establish even semi-private territoriality. The layout of the buildings on the site may have been economical, but it had eliminated any cloistered private space.

A great deal of the problem still lay within the buildings. The kitchen-living-dining area of the four-bedroom apartment, housing up to ten people, was the same size as that for a two-bedroom unit. Families needing five bedrooms rarely had more than one bathroom. A sociologist commented on the development by saying that in buildings where there are half a dozen or more families whose doors open onto a common hallway, there is a greater sense of availability of help should trouble arise than there is in buildings where only two or three apartments open onto a small hallway in a stairwell.

References:

Architectural Forum, "Case Study of a Failure."
Architectural Forum, "Slum Surgery in St. Louis."
Architectural Record, "Four Vast Housing Projects for St. Louis."
Housing Urban America, "The Lessons of Pruitt-Igoe."



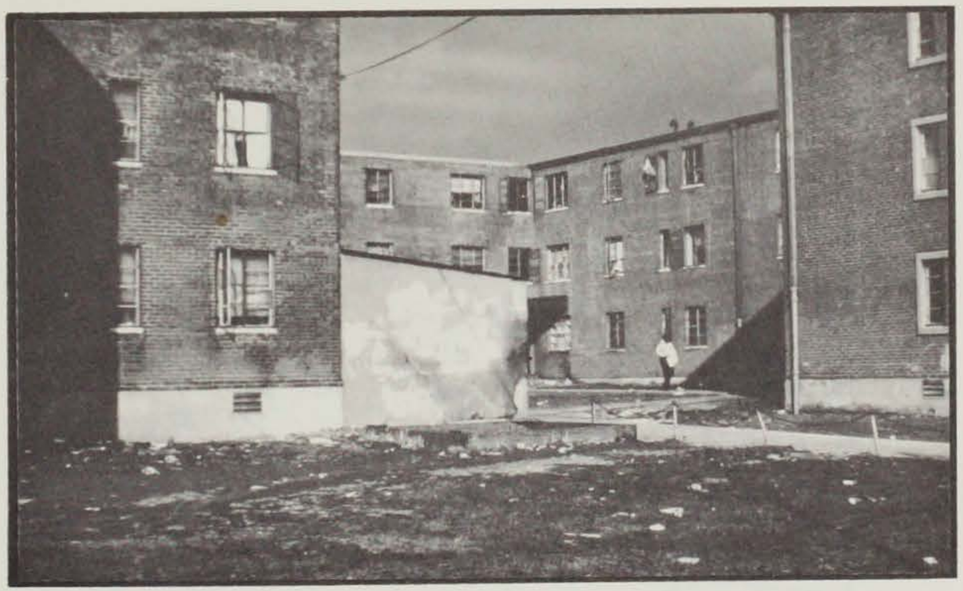
Migliore Manor

Architect:	Pohlman and Henry
Location:	Elizabeth, New Jersey
Housing Type:	Low-rise, high-density
Completion Date:	1960

Site: Located near the waterfront on a section of a four block area. The northern portion of this four block area is occupied by combined light commercial/residential. The actual site is about 5 acres. It is surrounded by old multi-family residences on two sides, and light industrial and an open field to the South. The development is bisected by Magnolia Avenue which runs through the site:

Concept: The development is generally inward focusing with none of the living units opening directly onto the perimeter streets. Parking is handled in a similar fashion to Pioneer Homes - located in the center of a block and entered from a perimeter street. Interior areas created by the building layout are intended to serve as community areas.

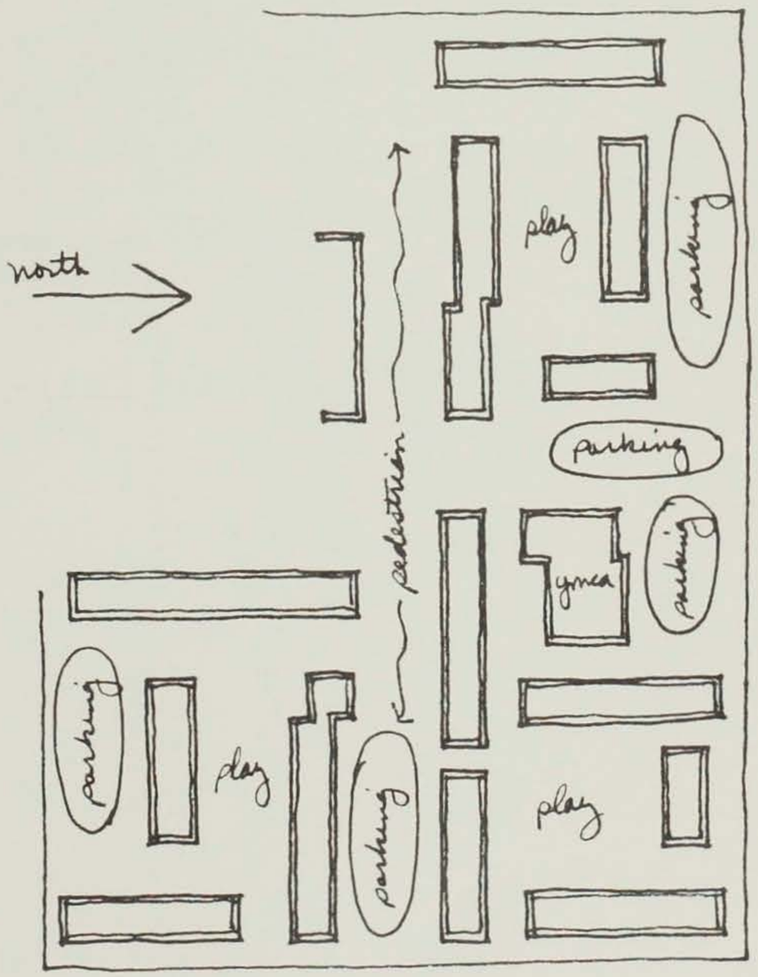
Data: Migliore Manor is a complex of 8 masonry buildings, all three stories, near Pioneer Homes. It covers an area of four blocks. The development contains most of the four-bedroom apartments in the city's public housing. Thirty-seven of its 247 apartments have four bedrooms. It has 137 apartments with three bedrooms, 59 with two bedrooms, and only 11 with one bedroom. There are play and sitting areas and clothes drying yards. The density is about 50 units/acre.



About 90% of the households are black and 10% are non-black.

Evaluation: This development is the newest of the three under consideration, but it is by far the most dilapidated. The grounds are poorly kept by the management and, as a result, they are abused by the residents. One of the major problems with Migliore Manor is the siting. The development is cut off from the rest of the neighborhood and the city by a string of old, rundown stores and bars. This development is also inward focusing, not taking advantage of the open field which borders it to the South. The development was intended to serve larger families than the previous two projects; therefore there are a greater number of children. As a result, one would think a greater effort would have been placed on the inclusion of child and family activities. This is not so, however, as children are often forced onto Front Street to play, creating a hazardous situation. The parking lots seem too small and the streets adjacent to the development are used for on street parking. The most discouraging thing about Migliore Manor is that it is 20 years younger than the other two projects, but its design does not reflect the 20 years of first hand knowledge that should have been gained by observing the conditions and the use of the other two developments.

References: After 25 Years the Housing Authority of Elizabeth, New Jersey Still Looks Ahead and Community Renewal Program: Technical Report.



St. Francis Square

Architect:	Marquis and Stoller
Location:	San Francisco, California
Housing Type:	Low-rise, medium density
Completion Date:	1964

Site: An urban renewal area that used to be low-income, high-crime. The building site is an L-shaped, three block site with a YMCA. The fourth block, which contains a school, completes the square. The area is surrounded on two sides by new upper/middle income residential and commercial developments and on the other two sides by a public housing project and an old, deteriorating residential section.

Concept: To provide an attractive living environment for middle-income families within the city, and to demonstrate that redevelopment could be used to provide moderate cost housing. According to the architect there was a deliberate decision to invest a large portion of effort to develop a total environment rather than individual units or buildings.

Data: The interior streets on the site were closed to form a super block and the units are grouped around three attractively landscaped playing squares. All parking is along the periphery and between building units of different squares. There are 299 garden apartments: 14 one-bedroom, one-bath (550 sq.ft.), 107 two-bedroom, one-bath (840 sq.ft.), and 178 three-bedroom, two-baths (1050 sq.ft.). The project was financed under FHA 221 (d)(3) and is a tenant-owned cooperative.

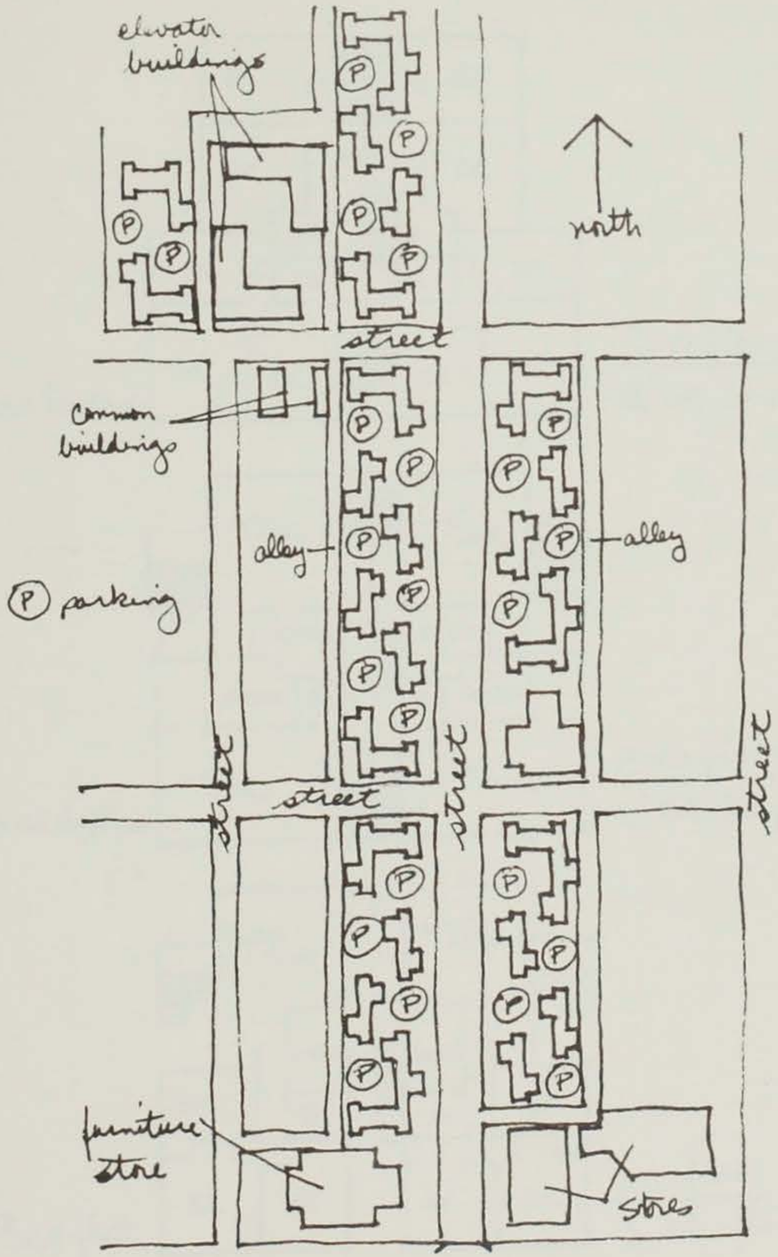
The resident breakdown is 54% Caucasian, 21% Black, 15.5% Oriental, and 9.5% interracial. Also, 50% of the families are standard nuclear families, 21% are single-parent families, 10% are childless couples, and 11% are unmarried adult households. Communal facilities include parking (.75 spaces per unit), trash collection areas, and laundries. Construction ran about $11.50 sq.ft., or $11,000 per unit.

Evaluation:

Residents have cited the good qualities as being a good place for raising children safe from traffic, integrated neighborhood, and the policy of allowing pets. Proximity to downtown was convenient and near bus routes, although the surrounding crime rate is fairly high. The housing units are grouped around a central hallway with six families sharing this common area. Pleasure strolls were made easy due to the landscaping and served to enhance social interaction. Strong sense of safety occurs within the development due to the physical layout. Parking is not very close to the units, not allowing each resident surveillance of his own car. Central sitting area is not used (bounded by two blank building end walls.) Kitchens were rated too small by occupants, and large families felt likewise about the living rooms. There is a lack of storage or hobby space. A separation of public and private space exists, and is fairly evident within the project.

References:

A.I.A. Journal, "The Architect's Response to the Study."
A.I.A. Journal, "The 1964 A.I.A. Honor Awards."
Defensible Space.
Resident Attitudes Toward the Environment at St. Francis Square, Working Paper #126.



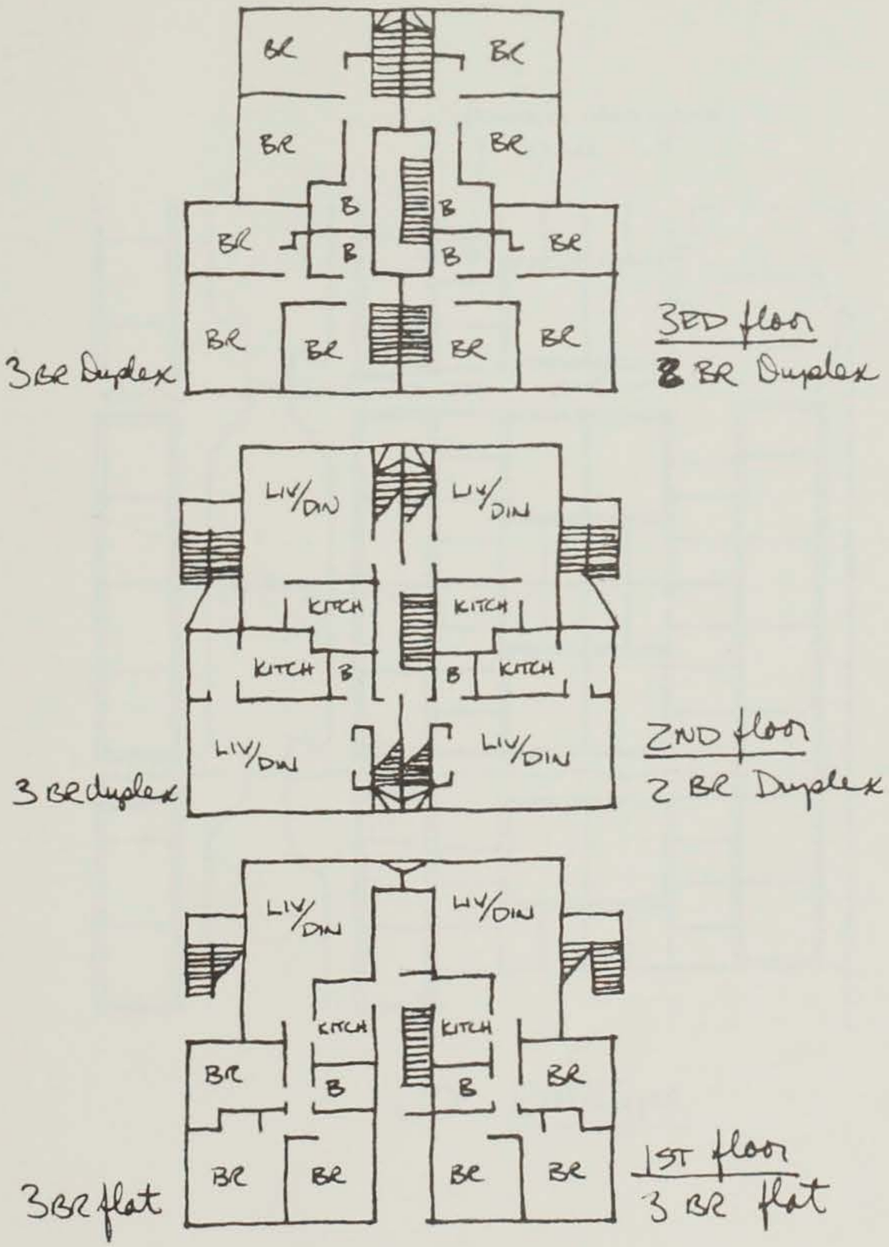
Woodlawn Gardens

Architect:	Stanley Tigerman
Location:	Chicago, Illinois
Housing Type:	Low-rise, high-density
Completion Date:	1971

Site: A worn-out, three block commercial strip only five minutes from the lake and twelve minutes from the loop. The site is only one-half block deep on either side on Cottage Grove Avenue.

Concept: To create a nonproject atmosphere with no high rises or corridors, and all apartment doors visible from outdoors.

Data: The site extends 125 ft. into the block on one side and 120 ft. on the other. Except for two low elevator buildings and a one-story community building the project is made up of the typical "module of six" which has six apartments on its three floors, and combines to form buildings up to 24 apartments. The two ground floor apartments have three bedrooms, and there are four duplexes above. Two have two bedrooms and the other two have three bedrooms. A tree-lined pathway system leads through the development, linking the external open spaces. Parking is in lots between the building groups. There are a total of 504 units with a density of 55 du/acre. A shopping plaza with eleven shops is included, as are tot-lots, a day care center, and common laundry facilities for each block. The project is FHA 221 (d)(3) financed and therefore room sizes are restricted. The blacktop surface extends from the parking areas into



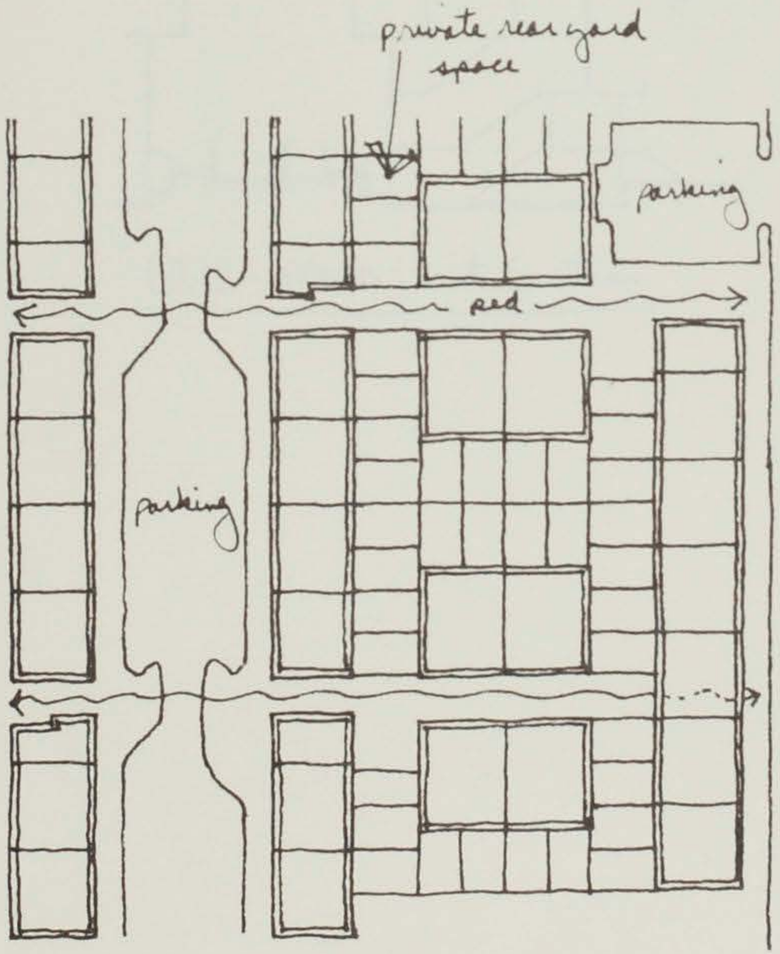
the heart of the development to make the parking areas seem "less parking like" and to act as a counter point to the white surfaced movementway. Area at the top of the stairs can be used for sitting in place of expensive balconies. Project cost was $11.50 sq.ft.

Evaluation:

The stores and community building are separated and not centrally located. This can be an inconvenience to the residents. The large expanse of paving will cut down on maintenance costs but may prove to lack some form of visual relief to the tenants. Parking areas are relatively close to the units, and have good surveillance, although not by all units. Kitchens are relatively small as are the living rooms, for large families. There seems to be a lack of storage space for the units. The architect seems to feel that one or two tall buildings should have been included, but the community made the decision to omit these. The unit plans are very efficient with little wasted space and seem to be the strong point of the design.

References:

Architectural Forum, "The Nation's Largest Low-Rise, 221 (d)(3) Project."
Architectural Forum, "Woodlawn Gardens, Chicago: Largest Low-Rise, 221 (d)(3) Project in the Country."



UDC Prototype

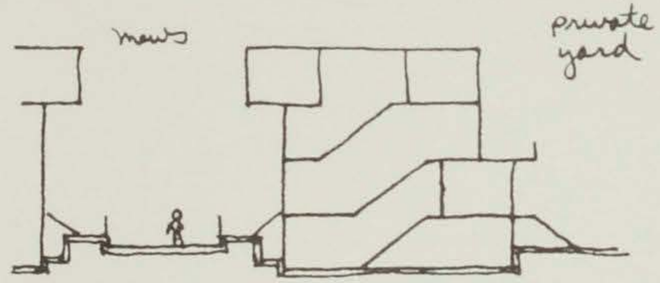
Marcus Garvey Park Village

Architect:	Institute for Architecture and Urban Studies and the Urban Development Corporation
Location:	Brooklyn, New York
Housing Type:	Low-rise, high-density
Completion Date:	1973

Site: A flat, almost vacant site with some existing housing and other facilities in one of New York's most troubled areas. An elevated subway track divides the site into two sectors. Nearby are both large housing developments and tracts of semi-detached housing with quiet, tree-lined streets.

Concept: To house families economically and humanely in a densely organized community. Low-rise, high-density was felt to be the best solution to project a sense of privacy and territoriality, as well as a sense of identity to each family unit, organization to enhance the community, and to be economically feasible.

Data: There are a total of 626 units with a density of about 50 du/acre on a 12.5 acre site. A total of 540 have two bedrooms or more while 248 are larger family units of three, four, and five bedrooms. The remaining 86 apartments are one-bedroom, or one-room units, some of which are at grade for the handicapped. There are two basic unit types; a mews unit and a street unit, each 39 ft. square. Each mews unit consists of 3 three-bedroom duplexes and 1 four-bedroom duplex. The street units consist of 1 two-bedroom and 1 three-bedroom duplex, with 2



UDC Mews Unit Section

two-bedroom flats and 2 one-bedroom flats on the upper floors. A community facility day care center, and an allocation of an area for commercial use are included. There is easy access to existing churches and a nearby park. A total of 300 parking spaces are provided. Each prototype actually cost $31,200 with some alterations due to site conditions and economic controls.

Evaluation: Defensible Space was a major consideration in the project's design. The hierarchy of space is clearly defined both in the units and the project as a whole. Identity to the individual unit is achieved in the direct relationship to the community space. Surveillance of the street is strong, but there is very little opportunity for good surveillance of the parking areas. Due to the age of the project, an honest evaluation is not possible at this time.

References: Another Chance for Housing: Low Rise Alternatives and Progressive Architecture, "Marcus Garvey Park Village, Brooklyn."

Conclusions

Upon reviewing the preceding case studies, several conclusions can be drawn.

1. The majority of the projects fall short in meeting the five major design criteria mentioned in the introduction.

2. The projects which meet most of these criteria were all constructed within the last 12 years, leading to speculation that they have benefited from analyzing the failures of earlier projects.

3. The most successful projects respond better to the context within which they are located.

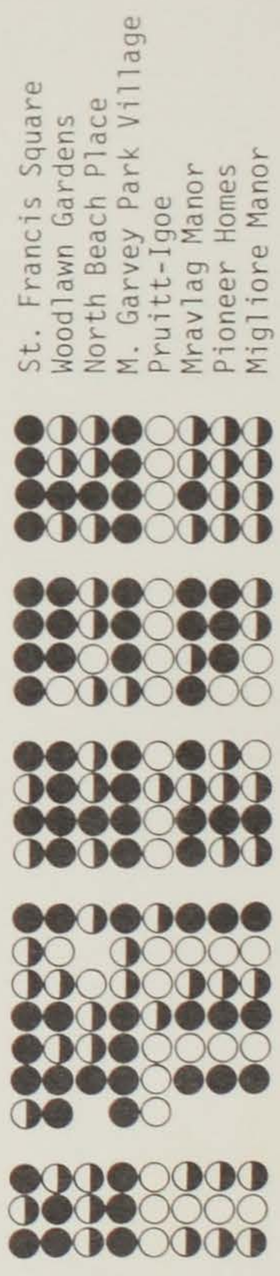
4. None of the three housing projects located in Elizabeth can be classified as being very successful compared to the other projects under consideration. This can be attributed, partially, to the age of two of the projects.

5. Mravlag Manor is the most successful of the housing projects located in Elizabeth.

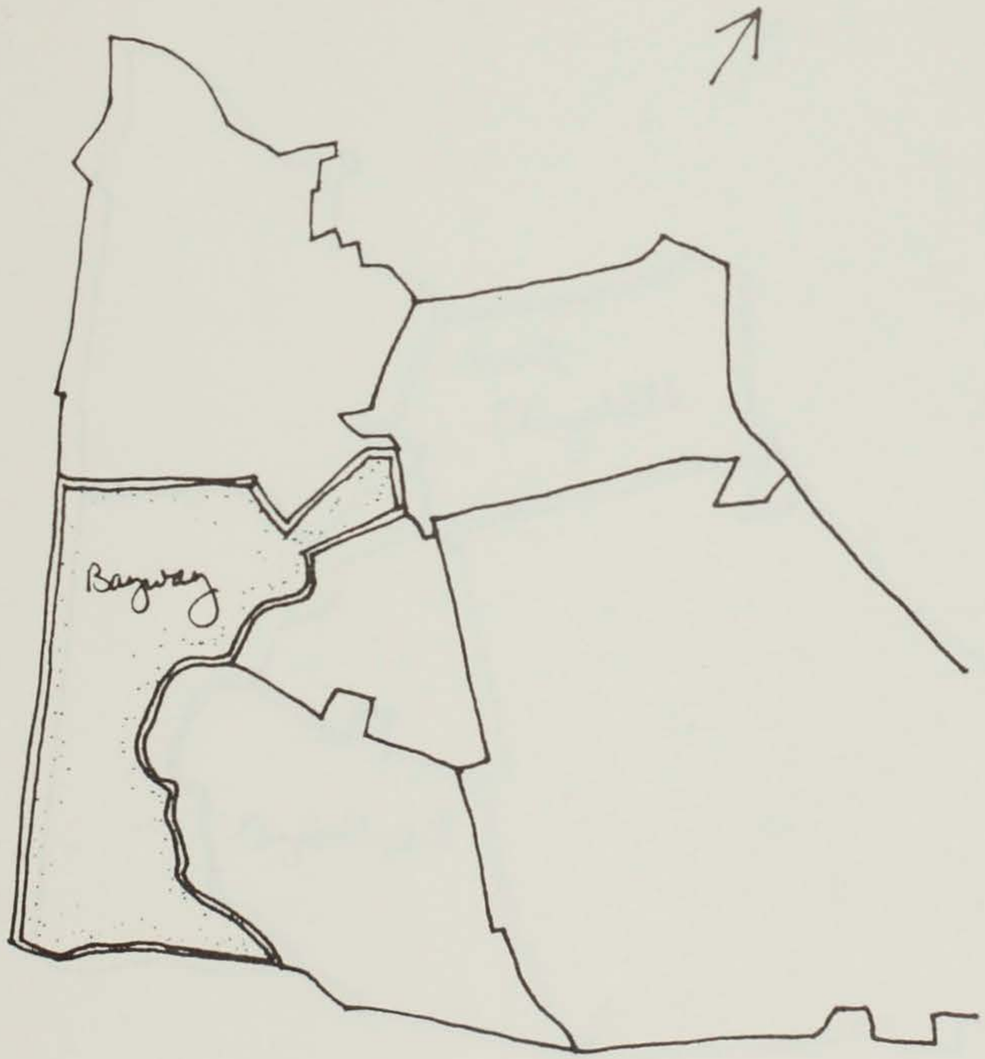
The analysis on the following page will provide a better look at the results of the case studies under consideration.

COMPARATIVE ANALYSIS

○ Poor
◑ Satisfactory
● Good



PLANNING CONTEXT

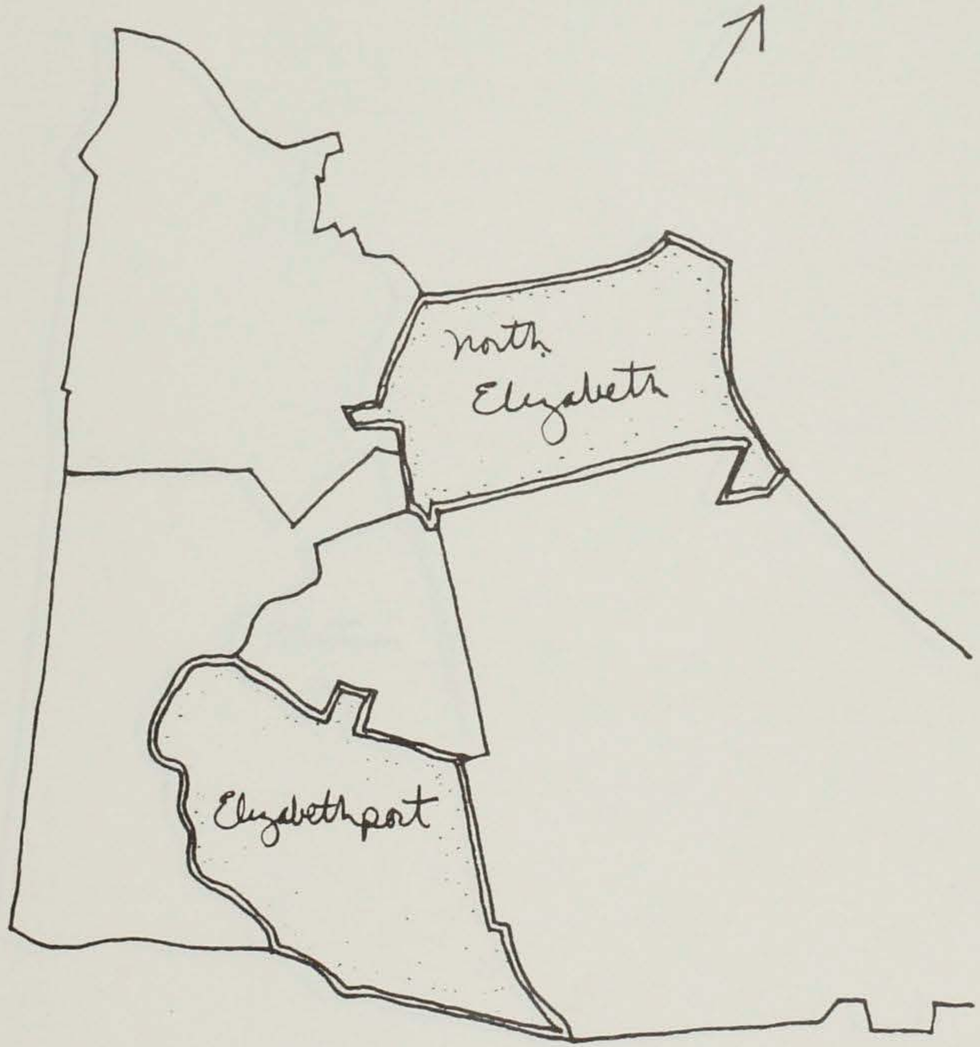


Introduction

In a 1971 analysis done by the planning firm of Raymond, Parrish & Pine, Inc., the city was divided into six neighborhood planning districts. This analysis considered various factors including structural conditions, family characteristics, environmental factors, circulation and street problems, and community facilities and services. The results of this analysis follow. (Community Renewal Program: Technical Report).

Bayway

The district is primarily residential but does include a portion of the CBD and a large industrial concentration east of the New Jersey Turnpike. The area is almost completely built up and much of it is in good condition. The residential areas contain a mixture of one and two-family houses, large houses that have been converted into apartments, and apartment houses of various sizes. Mravlag Manor, a public housing project, and the Elizabeth Center Apartments, another subsidized development, are located in the district. Only 14% of the buildings surveyed were deficient and the only major concentration of blight is on both sides of Route #1. The most significant appearance problems lie along Route #1, the Penn-Central Railroad tracks, the New Jersey Turnpike, and the Elizabeth River with Route #1 also being the major circulation problem. The major community facilities lying within the district are Thomas Edison High School, Williams Field, Mattano Park, Drotar Field, City Hall, St. Elizabeth Hospital, Battin High School, and Bayway Branch Library. The city's Master Plan recommends the addition of a new branch library, fire headquarters, a new co-educational high school, and the expansion of several existing schools. The overall neighborhood planning district has a deficiency of 10 acres of neighborhood playgrounds and 1 acre of neighborhood playfields. The total recreation deficiency is 18 acres, or about 45% of the required acreage.

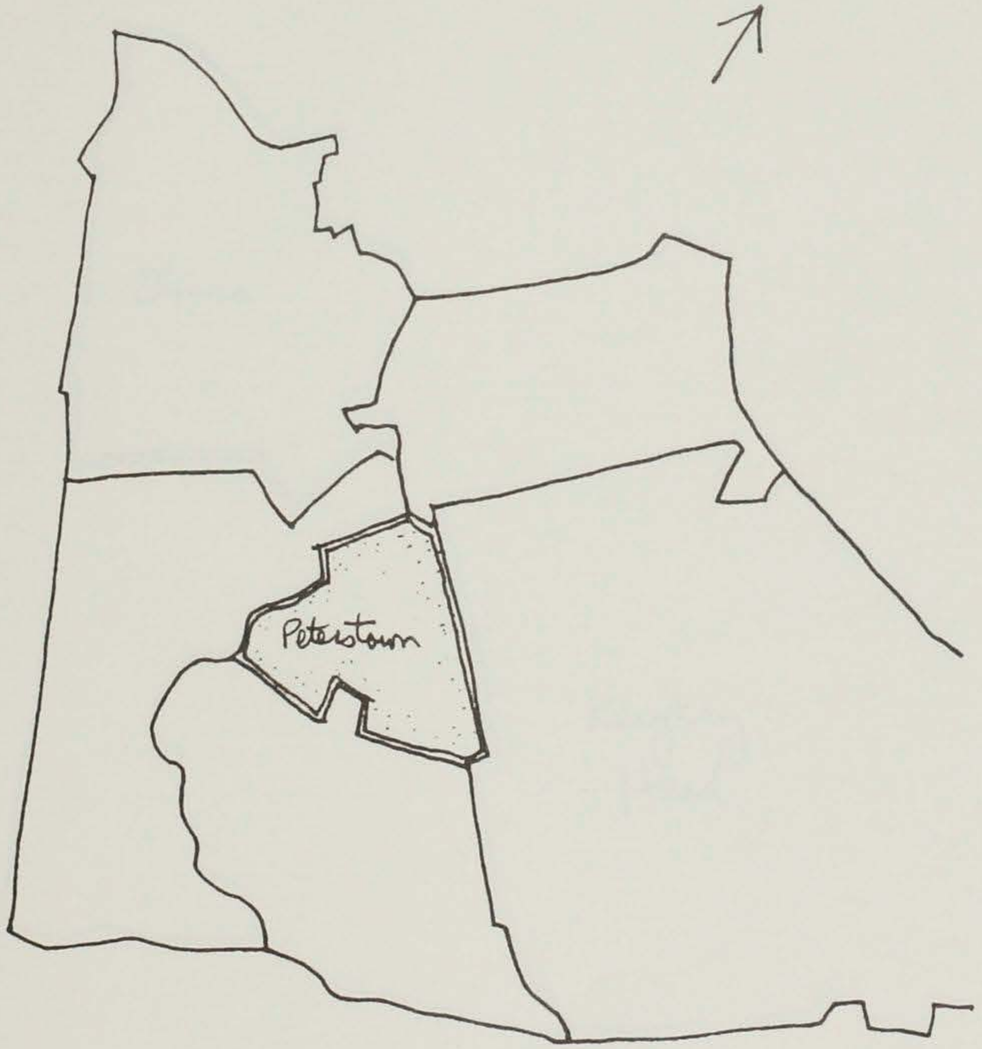


North Elizabeth

The district is primarily residential but contains commercial concentrations along North Broad Street, Newark Avenue, and Pennsylvania Avenue, and an industrial concentration built up along the Penn-Central tracks. The area is completely built up and much of it is in good condition. The residential areas contain a mixture of one, two, and four-family houses, scattered low-rise apartments, and high-rise apartment buildings. The major concentration of blight lies between Fairmount Avenue, Adams Avenue, Chestnut Street, and the Penn-Central tracks. There is a conflict between industrial and residential uses along Pennsylvania Avenue, Magnolia Avenue, and Chestnut Street. The North Broad Street/Newark Avenue strip provides an appearance problem as does Route #1, which is also one of the major circulation problems. The major community facilities included within the district are Kellogg Park, Kenah Field, the Monroe Branch Library, and the Board of Education Headquarters. The Master Plan recommended the expansion of two schools, a new branch library and a new fire station. The overall district has a deficiency of neighborhood playgrounds and 17 acres of playfields. The total recreation deficiency is 28 acres of about 56% of the required acreage.

Elizabethport

The district is primarily residential but also contains large industrial and commercial concentrations. The area is almost completely built up, but there is some vacant land. The residential areas contain a mixture of one and two-family houses, apartment buildings with stores on the first floors, and scattered low-rise apartment buildings. Two Public Housing Projects, Pioneer Homes and Migliore Manor are located in the district. The major commercial concentrations lie along Elizabeth Avenue, First Street, and Third Street, and the major industrial concentrations lie along Broadway, Trumbull Street, Port Avenue, Front Street, Third Avenue and South First Street. This district contains the poorest housing conditions in



the city and was considered the High Priority Study Area. The presence of several industrial uses in residential areas creates a conflict. Several blighting influences include the New Jersey Turnpike, the Central Railroad of New Jersey, and Newark Airport. The airport's landing pattern is directly over the district. The only major circulation problems are created by New Point Road and Trumbull Street which cut diagonal paths through a gridiron pattern. The major community facilities in the district are Elementary School #1 (new), Brophy Field, Jackson Park, Liberty Square Branch Library, and Migliore Branch Library. The Master Plan recommended a new fire station, a new branch library, and a neighborhood center. The overall district has a deficiency of 14 acres of neighborhood parks, 19 areas of playgrounds, and 21 acres of playfields. The total recreation deficiency is 54 acres or about 77% of the required acreage.

Peterstown

The district is primarily residential but it also contains industrial concentrations along the Central Railroad tracks and Broadway, and a commercial concentration along Elizabeth Avenue. The area is completely built up except for the Central Railroad yards. Most of the residential areas are made up of one and two-family houses, but there are some apartment buildings. The Ford-Leonard Towers Public Housing Project for the elderly is in this district. The major concentrations of blight are located along Route #1, Magnolia Avenue, and East Grand Street, as well as the area bounded by Trumbull Street, Smith Street, Elizabeth Avenue, Seventh Street and Sixth Street. The major appearance problems are Route #1 and the Central Railroad tracks and yards. The major community facilities include Jefferson High School, Police Headquarters, East Jersey Community Center, Elizabeth General Hospital, and Alexian Brothers Hospital. The Master Plan recommended the replacement of two schools and a new branch library. The overall district has a deficiency of 8 acres of neighborhood parks, 7 acres of playgrounds, and 8 acres of playfields. The total recreation deficiency is 23 acres or about 80% of the required acreage.

Elmora

The district is primarily residential but also includes the western portion of the CBD, strip commercial along Rahway Avenue, Morris Avenue and Elmora Avenue, and industrial uses along the Central Railroad of New Jersey tracks. The area is completely built up and the western portion is made up almost entirely of one-family homes with a mixture of one and two-family houses and scattered apartment houses of various sizes spread throughout the rest of the district. Most new high-rise apartments are located on West Jersey Street and Cherry Street including J.F.K. Arms and Farley Towers, both Public Housing Projects designed for the elderly. The condition of the housing in this district is generally the best in the city because of its age. There are no major concentrations of blight in the district, nor are there any major land use conflicts. The major circulation problem in the district is the intersection of Westfield Avenue and Elmora Avenue. Both streets are heavily trafficked and this results in severe congestion. The major community facilities include the County Court House, City Public Library, Warinanco Park and the Elmora Branch Library. The Master Plan recommended several new facilities including two new fire stations and the expansion of a junior high school. The overall district has a deficiency of 12 acres of neighborhood parks, 17 acres of playgrounds and 23 acres of playfields. The total recreation deficiency is 52 acres or about 80% of the required acreage.

Keighry Head

The district is primarily industrial and contains only one concentration of houses. The New York Port Authority's Newark Airport and Marine Terminal facilities occupy a major portion of the district. The residential area contains mostly one and two-family houses. The major concentration of blight lies in the area bounded by Adams Avenue, Bond Street, Division Street, Julia Street and Fairmount Avenue, and extends northward to Route #1. The housing conditions in this area are among the worst in the city, partly due

to the fact that residential uses are inappropriate for this area. This incompatible industrial and residential use is a major cause of blight, as well as the presence of Route #1, the New Jersey Turnpike, and Newark Airport. Once again, Route #1 is a major circulation problem. Several streets in the district are incomplete or are in poor condition and several others are only paper streets. There are very few community facilities due to the small population and a new fire station was recommended by the Master Plan. The overall district has a deficiency of 4 acres of neighborhood parks, 5 acres of playgrounds, and 6 acres of playfields. The total recreation deficiency is 15 acres or about 95% of the required acreage.

Summation

Based on the results of the preceding analysis the initial emphasis on improving housing conditions in the city should be directed towards the Elizabethport area. The six neighborhoods, listed in terms or priority are as follows:

1. Elizabethport
2. Peterstown
3. Keighry Head
4. Bayway
5. North Elizabeth
6. Elmora

2.2 LOCATION OF LOWEST INCOME FAMILIES

Studies have shown that the lowest income areas are often located in the central core of cities, which were usually the first to be built up. They are also usually located on one side of the city (south side of Atlanta, east side of Boston, etc.). These areas are often determined by the topography or rivers, lakes or oceans, which were important factors in the early development and growth of the city. (Where the Rich and the Poor People Live). Elizabeth is typical in this respect. The primary factors leading to the present location of low income families in Elizabeth include:

1. Economics - The living units west of Route #1 and south of Elizabeth Avenue are, in general, more expensive than those east of Route #1 and north of Elizabeth Avenue.

2. Discrimination - Proof of this is difficult to record, but figures support this idea, both historically and currently.

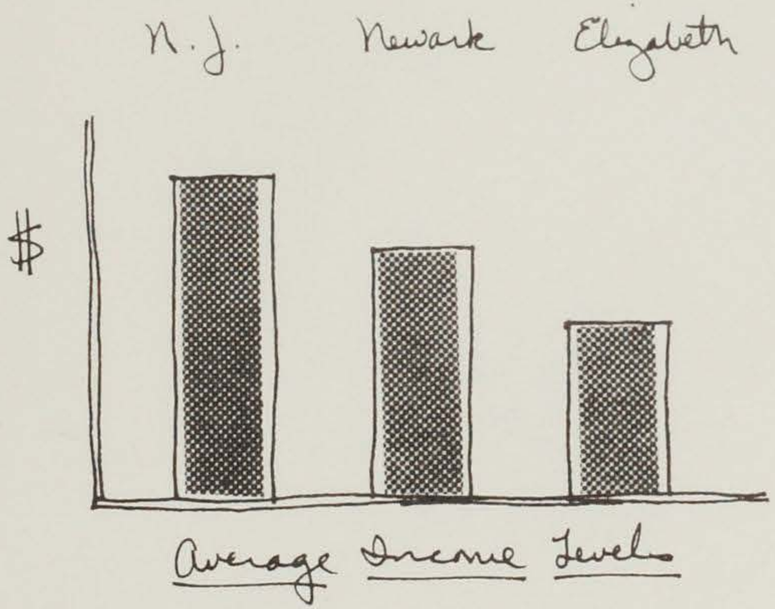
3. Group Consciousness - It is a fact that different religious, national, and racial groups tend to cluster together. Therefore, the housing patterns may be a result of choice by the minority group.

4. Development Factors - From 1960 to 1969, most of the new residential construction in Elizabeth has been multi-family, and over 95% of this is located west of Route #1 and south of Elizabeth Avenue. The average cost per room of these developments makes it impossible for low and moderate income families to rent them.

5. Regional Patterns - Regional patterns of minority groups' housing are directly related to the location of jobs, the nature of the work, mass transportation, and housing.

(Note: the five factors on the preceding page were obtained from the Community Renewal Program: Technical Report).

Communities with older, cheaper housing, good mass transit systems, and industrial jobs are the communities with a significant percentage of minority group families. The planning and zoning policies of the communities surrounding Elizabeth are such that apartments and publicly assisted housing for low and moderate income families are discouraged.

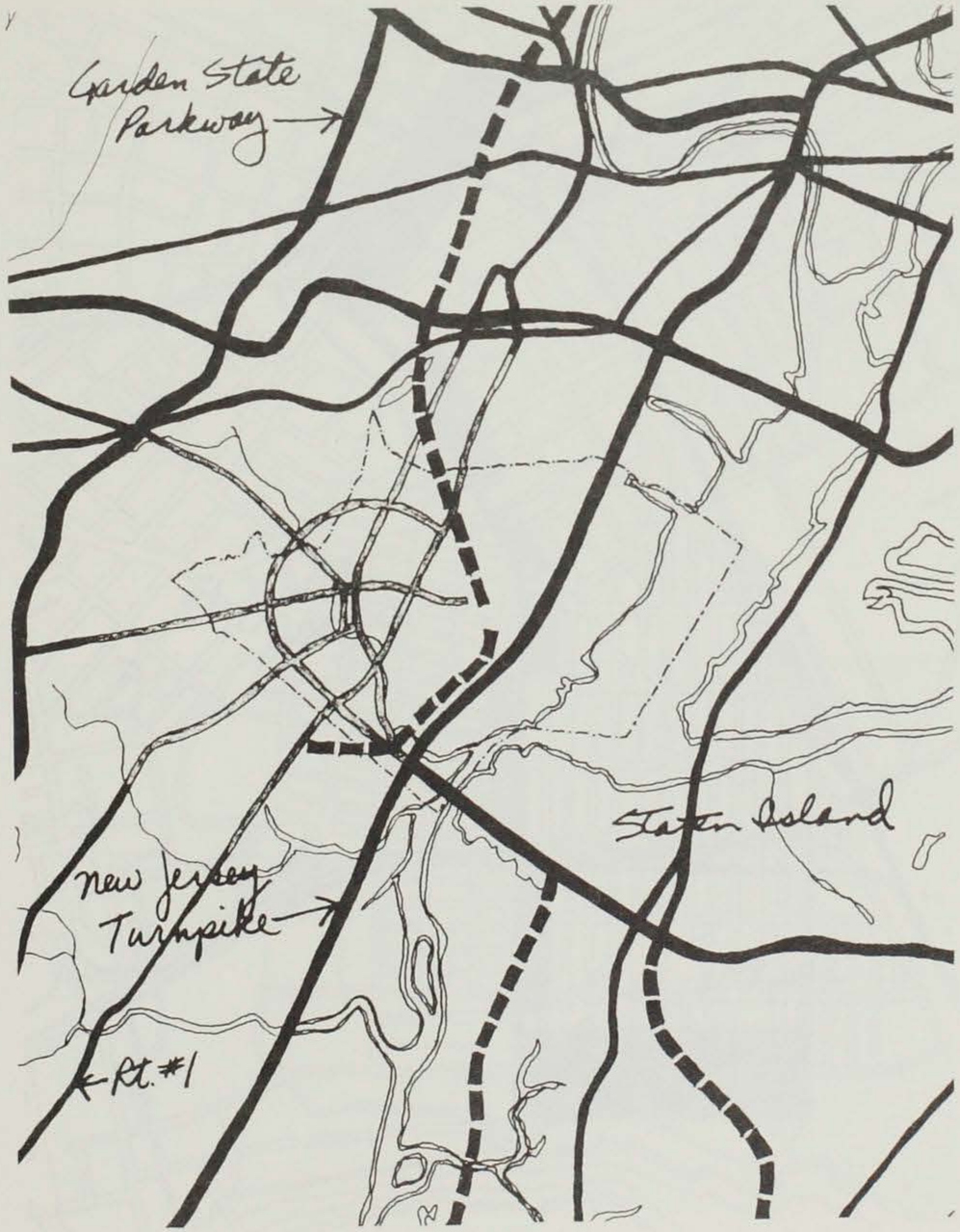


2.3 USER PROFILES

Based on findings by the U.S. Census Bureau and on predictions by Raymond & May Associates, the need for adequate housing in Elizabeth's near future will be shared by the elderly, young adults without children, and low to moderate income groups with children. An increasing percentage of these groups will be non-white.

Of the approximately 12,000 non-white residents in the city in 1960, about 46% lived in the high priority study areas. About 32% of the households in these areas are non-white, about 23% have a yearly income of less than $4,000, and about 40% of the households need dwelling units with three or more bedrooms. Approximately 45% of the households in these areas are eligible for public housing or another form of subsidized housing. In a 1966 Sales Management estimate of income distribution, Elizabeth is shown with more families in the under $4,000 range than Newark. It also showed fewer families in the over $10,000 bracket than Newark. The median family income in Elizabeth in 1959 was $6,429, less than the state average. (The Master Plan.)

ARCHITECTURAL CONTEXT



3.1 OVERVIEW

Introduction

This section is designed to provide a very brief history of the development of both the region and the city. An emphasis is placed upon the major traffic arteries which serve the region and were major factors in its development.

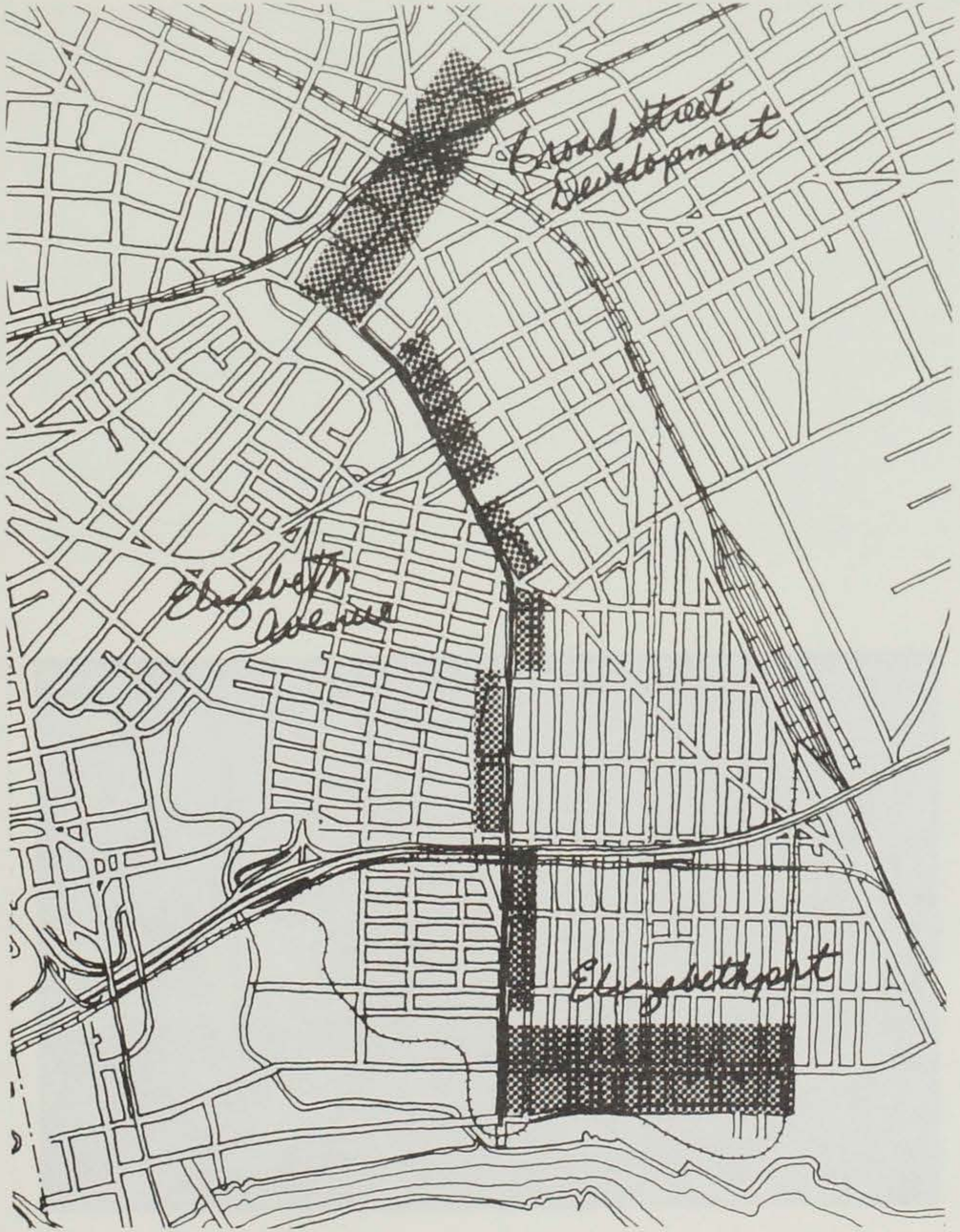
The Region

Several factors combine to give Elizabeth an advantageous location in the New York Metropolitan Region. These factors include the city's proximity to New York City as well as its excellent transportation connections by highway, rail, water and air. Elizabeth has been an important rail shipping terminus since the early 1800's and Routes #1 and #27 have been major thoroughfares since colonial times. The construction of Newark Airport, Port Elizabeth and the New Jersey Turnpike have extended the city's influence even further.

Most roads in the region fall into two categories - local inter-urban roads and through roads. Routes #1 and #9, the New Jersey Turnpike and the Garden State Parkway are major regional highways that either pass through or go around the city. Current state highway plans call for a Route #81 by-pass in Elizabeth, Route #1 improvements, and extension of Interstate #278 from the Goethals Bridge to Routes #1 and #9. Also, Interstate #78, which will parallel Route #22, will be completed shortly as will a circumferential outer loop formed by Interstate #278. (The Master Plan).

Traffic problems still occur, however, for two main reasons: first, through traffic moving from town center to town center, or from town center to the regional highways, usually passes through the CBD; and second, traffic coming from the regional highways must use secondary local roads to reach local destinations.

The land use patterns immediately surrounding Elizabeth are as follows: to the east, industry, meadowlands, major regional



highways, and the Kill Van Kull Waterway, and to the west, rapidly growing suburban areas.

The City

Shortly after it was first settled in 1665 Elizabeth began to develop in two geographical locations, along the Arthur Kill and along Broad Street. Broad Street, downtown Elizabeth, was a thriving area from the earliest times until the 1920's. Elizabethport, along the Arthur Kill, became an industrial and transportation center until the early 1900's. The only connection between these two areas was a cluster of houses fronting along Elizabeth Avenue. In the early 1900's the growth spread throughout the area, encompassing the present city limits as well as several surrounding communities. Much of this growth was credited to the increasing use of the automobile and the resulting highways. The most recent growth is centered in the meadowlands in the form of industrial facilities, an expanding Newark Airport, and a growing Port Elizabeth Marine Terminal. Beyond the meadowlands, however, there isn't much room for any more outward growth. As a result, any further growth will involve, for the most part, the renovation or replacement of existing structures. For example, very little construction of single-family homes will occur in the future with a greater emphasis being put on multi-family dwellings. (The Master Plan). At the same time, any discrepancies in the existing zoning regulations and building codes will need to be corrected to ensure that past planning errors will not be repeated.

3.2 SITE STUDIES AND SELECTION

Introduction

Upon careful consideration of various factors, four sites were determined to be feasible for the construction of a multi-family housing development. The sizes of the sites vary from 6 acres to 47 acres, and they are all located south of the Pennsylvania Railroad tracks. Three are located in the Elizabethport section, and one in the Bayway section.

Site #1

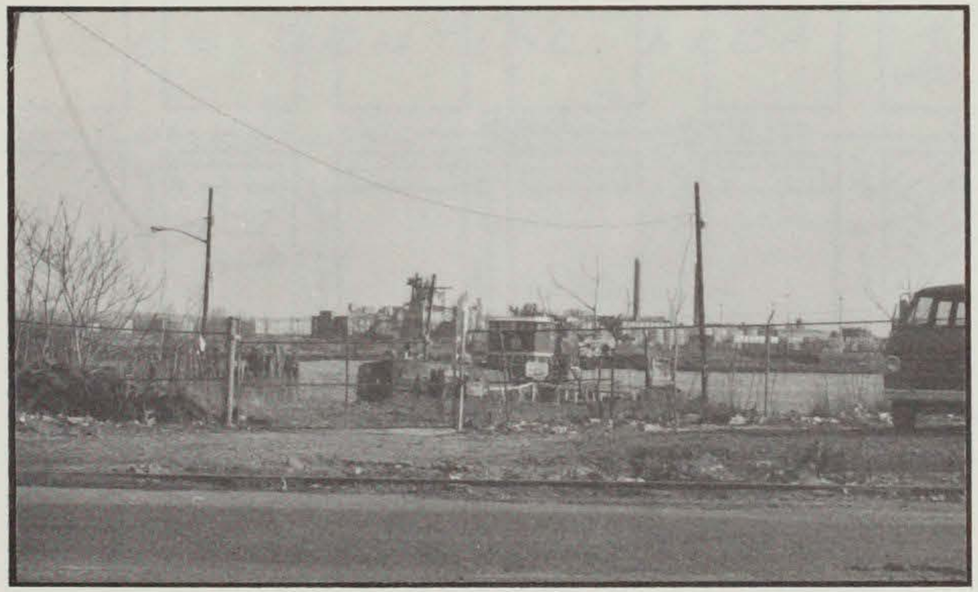
Located in the Bayway section, this site is next to Mravlag Manor, one of the city's public housing projects. The site covers about 6 acres and it is presently owned by the Elizabeth Housing Authority. One advantage of this site is that it would not involve any displacement of families. The location is one block from Bayway Avenue, a major artery and bus route. The site is currently zoned residential.

Site #2

Located in the Elizabethport section, part of the site fronts on the Elizabeth River. The site covers about 10 acres and is owned by the Union County Park Commission. This site would not involve the displacement of any families and is currently zoned residential.

Site #3

Located in the Elizabethport section, the site is adjacent to the blocks containing Migliore Manor, one of the city's public housing projects. The total area is slightly over 9 acres, and it consists of four city blocks. The site is privately owned and would involve the displacement of several families. There is presently a concentration of structurally poor buildings on the site. The site fronts on First Street, which is a bus route, providing convenient public transportation. The site is currently zoned light industrial.



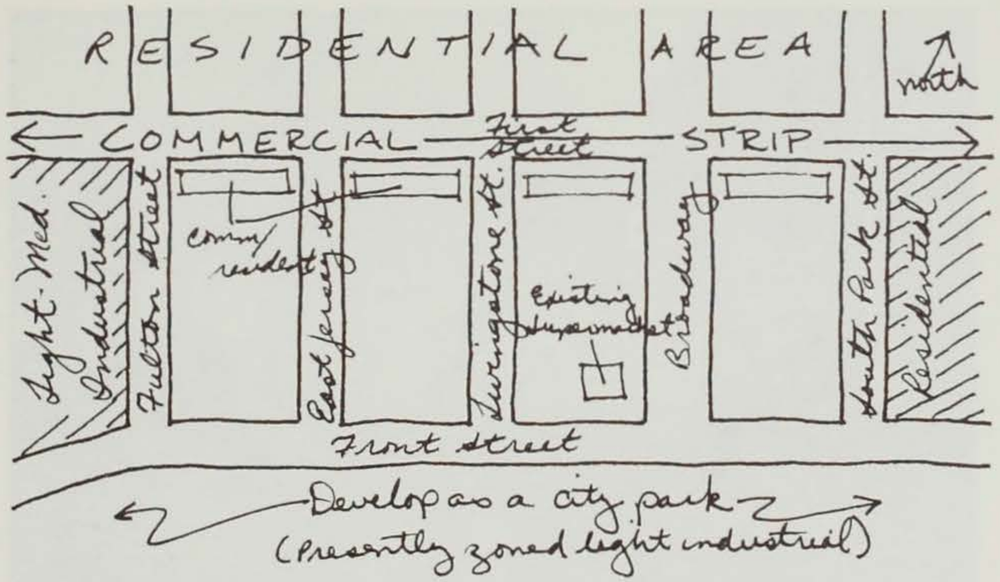
Site #4

Located in the Elizabethport section on the waterfront, the site covers about 47 acres and is owned by both the city and the Central Railroad of New Jersey. Construction on the site would involve the displacement of a few families. The site is one block from First Street which is a bus route. Currently this site is zoned medium industrial.

Conclusions

After careful evaluation of all four sites, the use of two of them has been decided upon. Site #3 will be developed with new housing and Site #4 will be developed as a new waterfront park to be city owned and operated. It is felt that the development of these two sites will have greater significance in the move toward the overall improvement of the entire city.

Although approximately 350 residents will be displaced from Site #3 preceding the construction of the new development, the number of units being added will result in a substantial net increase in the number of people living within the four block area. It is suggested that provisions for the accomodation of the displaced residents be made prior to any demolition or new construction.



3.3 SITE ANALYSIS

Introduction

This analysis provides a description of the existing conditions on the site, as well as those of the surrounding neighborhood. Factors which will most likely be strong design determinants are also included. The accompanying sketches are provided to supplement the written material.

Description

The site is located within the boundaries of the high priority action area, and all four blocks have been surveyed and found to contain concentrations of structurally deficient buildings. It is basically flat and is comprised of four city blocks, each 200' X 400'. These blocks form part of the city's gridiron street pattern.

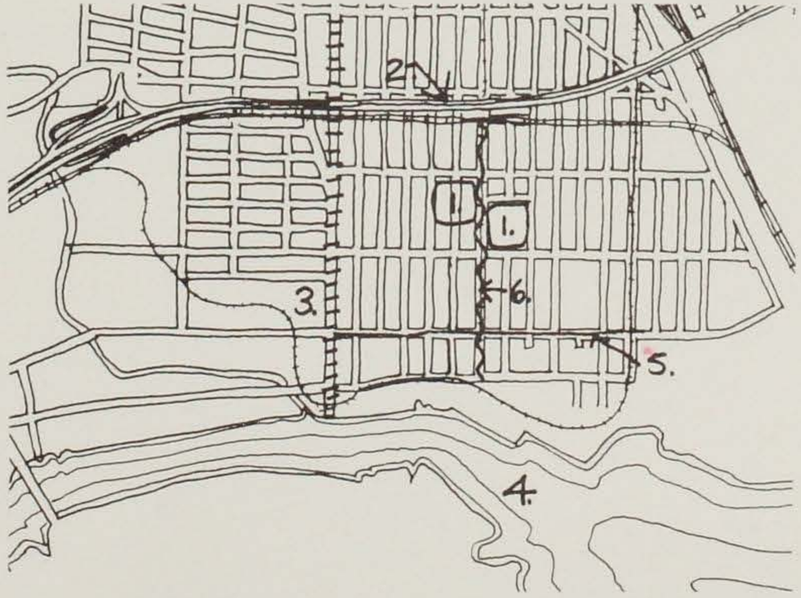
Presently, the site contains both commercial and residential uses. All of the structures are old and most are in relatively poor condition. The situation can be categorized as follows:

1. Commercial use occurs along First Street on the ground floors. The neighborhood's only supermarket is located on Broadway between First and Front Streets.

2. Residential use occurs on First Street above the commercial and is scattered along the other streets.

3. Vacant lots appear throughout the site including a few parking lots.

The streets along the perimeter of the site include First Street to the North, South Park Street to the East, Front Street to the South, and Fulton Street to the West. The interior streets are East Jersey Street, Livingston Street, and Broadway. All of the



streets are approximately 60' wide except Broadway which is approximately 100' wide.

Currently, the block east of the site is zoned multi-family residential and contains Migliore Manor, a three-story public housing project. The block to the West is zoned light industrial and contains several structures, one of six-stories, a couple of small parking lots, and a facility belonging to Bethlehem Steel Company. The sections of the four blocks which front the site to the North are presently zoned commercial and contain small scale retail on the ground floor and residential on the upper levels. The maximum height of any of these structures is three-stories, and several are quite old and in need of repair, or demolition.

Conclusions

The major factors which will influence the development of the site include:

1. School #1 and Jackson Park, two community facilities located one block to the North on Broadway.

2. The New Jersey Turnpike, a major regional artery and a visual and physical barrier, located three blocks to the North and running parallel to First Street.

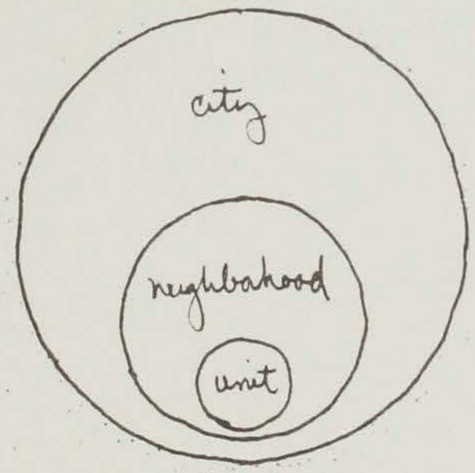
3. Elizabeth Avenue, a major city artery, located three blocks to the West and running perpendicular to First Street.

4. The Arthur Kill, a waterway located about one block to the South.

5. A city bus route, which runs along First Street and passes through the city's central business district.

6. Broadway, a key neighborhood street which runs through the site.

ARCHITECTURAL PROGRAM



Hierarchy of Goals

4.1 GOALS AND OBJECTIVES

Introduction

At some stage in a study of new approaches to the design and development of housing for any city, certain criteria for design must be determined. This involves two major categories; first, a set of objectives relating to the design of the neighborhood as a whole, and second, a set of objectives relating to the design of the living unit itself. The following list is made up of various criteria developed for the design of multi-family housing from a wide range of architects, designers and agencies. (Beyond Habitat, Community & Privacy, Defensible Space, Another Chance for Housing: Low-Rise Alternatives). The purpose of the list is simply to serve as a basis for the approach to the design of low-rise, high-density housing within an urban setting. The list is not complete and, in fact, touches only upon the general, more important issues that should be considered.

Neighborhood

1. Create a physical environment which induces both a sense of community, and a sense of privacy, at a number of different scales.

2. Induce a desire, within each household, to contribute to the upkeep of the community as a whole.

3. Promote easy recognition of neighbors through the neighborhood layout.

4. Group the dwellings in such a way that the spacial profile of the street is preserved, and arrange for a good number of private entrances to open directly off the street.

5. Supply the potential for adequate child supervision from the dwelling.

6. Minimize undesignated interior space and control the size and location of play spaces for young children.

7. Clearly define the hierarchy of space.

8. Take full advantage of existing amenities including natural topography and views, and mass transit systems.

9. Achieve physical and social continuity with the existing neighborhood.

10. Encourage a mixture of various family sizes and types.

11. Provide efficient parking as close to the units as is practicable.

12. Provide clearly defined pedestrian and vehicular circulation routes free of conflicts.

13. Limit the distance from the street to the highest apartment to 3½ floors.

14. Situate the entrances of several units in close proximity to one another to promote social interaction between families.

15. Employ various means of noise control within the development to minimize the chance of tenants being disturbed.

16. Consider the need for emergency access and escape.

17. Provide children of various age groups with some play areas, or recreational facilities within a reasonable distance of their living units.

18. Stimulate social interaction between all age groups living within the neighborhood.

Dwelling Unit

1. Provide a dwelling unit that is responsive to the varying needs of the individual occupants living within it.

2. Provide private exterior space, equal in size to the interior living space, for as many units as possible.

3. Provide sufficient and secure storage space for bicycles, carriages, etc.

4. Take full advantage of climatic factors and provide a means of natural ventilation for each dwelling.

5. Provide sufficient space within the unit to satisfy the requirements for the normal range of family activities.

6. Provide each dwelling with an identifiable element enabling each occupant to recognize his particular unit when he is in the immediate vicinity.

7. Provide sufficient sound control devices such that privacy is assured within each unit.

8. Provide each unit with a well defined and protected entrance.

Conclusion

The final objective of this investigation is to offer an alternative form of low-rise, high-density housing to the City of Elizabeth.

An alternative, that is, to what exists in the city presently. It is hoped that the design of this housing, along with the accompanying improvements made to the surrounding areas, will result in a neighborhood that is both visually and socially more appealing than the one in which the investigation took root.

4.2 ACTIVITY PROGRAM AND SPACE REQUIREMENTS

Introduction

The development of the site will include provisions for several neighborhood facilities in an effort to better integrate the housing with the surrounding area. The location of these facilities will be such that their use by the general public will not infringe upon the privacy of the residents living within the development.

The total number of living units to be provided on the site is 376. The breakdown of these units will be as follows:

one-bedroom	29%
two-bedroom	29%
three-bedroom	21%
four-bedroom	15%
five-bedroom	6%
total	100%

The number of units provided will result in a total density which would be comparable to that of the three low-rise public housing projects which are presently located in the city. This is the major goal of the investigation - to provide an alternative to the low-rise, high-density housing which presently exists in Elizabeth.

Program

General retail space	@	24,000 sq. ft.
Grocery store	@	4,800 sq. ft.
Open market	@	6,000 sq. ft.
Branch library	@	5,600 sq. ft.
Community and recreation center	@	26,000 sq. ft.

(Note: Designed to serve the neighborhood and the entire city working in conjunction with the city park. This facility will include offices, club rooms, gym-auditorium, dressing-locker rooms, kitchen, outdoor municipal pool, day care center, and storage for the maintenance of the city park.)

One-Bedroom Living Unit (flat)

living-dining	232	sq. ft.
kitchenette	60	sq. ft.
bedroom	120	sq. ft.
bedroom storage	17.5	sq. ft.
bath	35	sq. ft.
storage	40	sq. ft.
sub-total	504.5	sq. ft.
patio	156	sq. ft.
total	660.5	sq. ft.

Two-Bedroom Living Unit (flat)

living-dining	232	sq. ft.
kitchenette	60	sq. ft.
bedroom	115	sq. ft.
bedroom storage	21	sq. ft.
bedroom	94	sq. ft.
bedroom storage	10	sq. ft.
bath	35	sq. ft.
storage	42	sq. ft.
sub-total	609	sq. ft.
patio	152	sq. ft.
total	761	sq. ft.

Three-Bedroom Living Unit (flat)

living	209	sq. ft.
dining	172	sq. ft.
kitchen	90	sq. ft.
bedroom	130	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	85	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	85	sq. ft.
bedroom storage	14	sq. ft.
baths (2) @ 35 sq. ft. each	70	sq. ft.
storage	85	sq. ft.
sub-total	975	sq. ft.
patio	248	sq. ft.
total	1,223	sq. ft.

Four-Bedroom Living Unit (duplex)

living	225	sq. ft.
dining	172	sq. ft.
kitchen	90	sq. ft.
bedroom	130	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	124	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	110.5	sq. ft.
bedroom storage	14	sq. ft.
bedroom	106	sq. ft.
bedroom storage	14	sq. ft.
baths (2) @ 35 sq. ft. each	70	sq. ft.
storage	75	sq. ft.
sub-total	1,165.5	sq. ft.
rear yard	490	sq. ft.
total	1,555.5	sq. ft.

Five-Bedroom Living Unit (duplex)

living	225	sq. ft.
dining	172	sq. ft.
kitchen	90	sq. ft.
bedroom	130	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	124	sq. ft.
bedroom storage	17.5	sq. ft.
bedroom	110.5	sq. ft.
bedroom storage	14	sq. ft.
bedroom	106	sq. ft.
bedroom storage	14	sq. ft.
bedroom	96	sq. ft.
bedroom storage	9	sq. ft.
baths (2) @ 35 sq. ft. each	70	sq. ft.
storage	75	sq. ft.
sub-total	1,268.5	sq. ft.
rear yard	490	sq. ft.
total	1,758.5	sq. ft.

Resident Center

offices (2) @ 120 sq. ft. each	240	sq. ft.
meeting room	480	sq. ft.
laundry facilities (one of three)	240	sq. ft.
storage	400	sq. ft.
mechanical	800	sq. ft.
total	2,160	sq. ft.

The living units shown above represent only one example from each unit type. For example, more than one layout exists for the one-bedroom, two-bedroom, and three-bedroom units. Only one example from each type was chosen.

PROBLEM SOLUTION

CONCLUSION

The purpose of this study was to offer to the City of Elizabeth an alternative form of low-rise, high-density housing. An alternative that is, to what presently exists in the city. With emphasis put on the five major criteria mentioned in section 1.6 of this study, it is felt that a workable solution has been found. This solution shows improvement over any existing housing located in the city of comparable density and scale.

The placement of the living units on the site is designed to initiate a sense of community within the development. This is achieved by limiting to a maximum of four the number of living blocks in any one row. Also, the number of families sharing a common stairway is limited to a maximum of six.

The enclosed yard areas and patios help to control the movement of young children, aiding in their supervision. The community play area and green space is located such that adequate supervision of the area is insured at all times.

The allocation of private yard space, and the absence of vast expanses of undefined open space should help to minimize problems of maintenance. This duty will be placed to a great extent in the hands of the tenants themselves. The close proximity of the living units to a street, either pedestrian or vehicular, makes the grounds safer for the residents and easier to police.

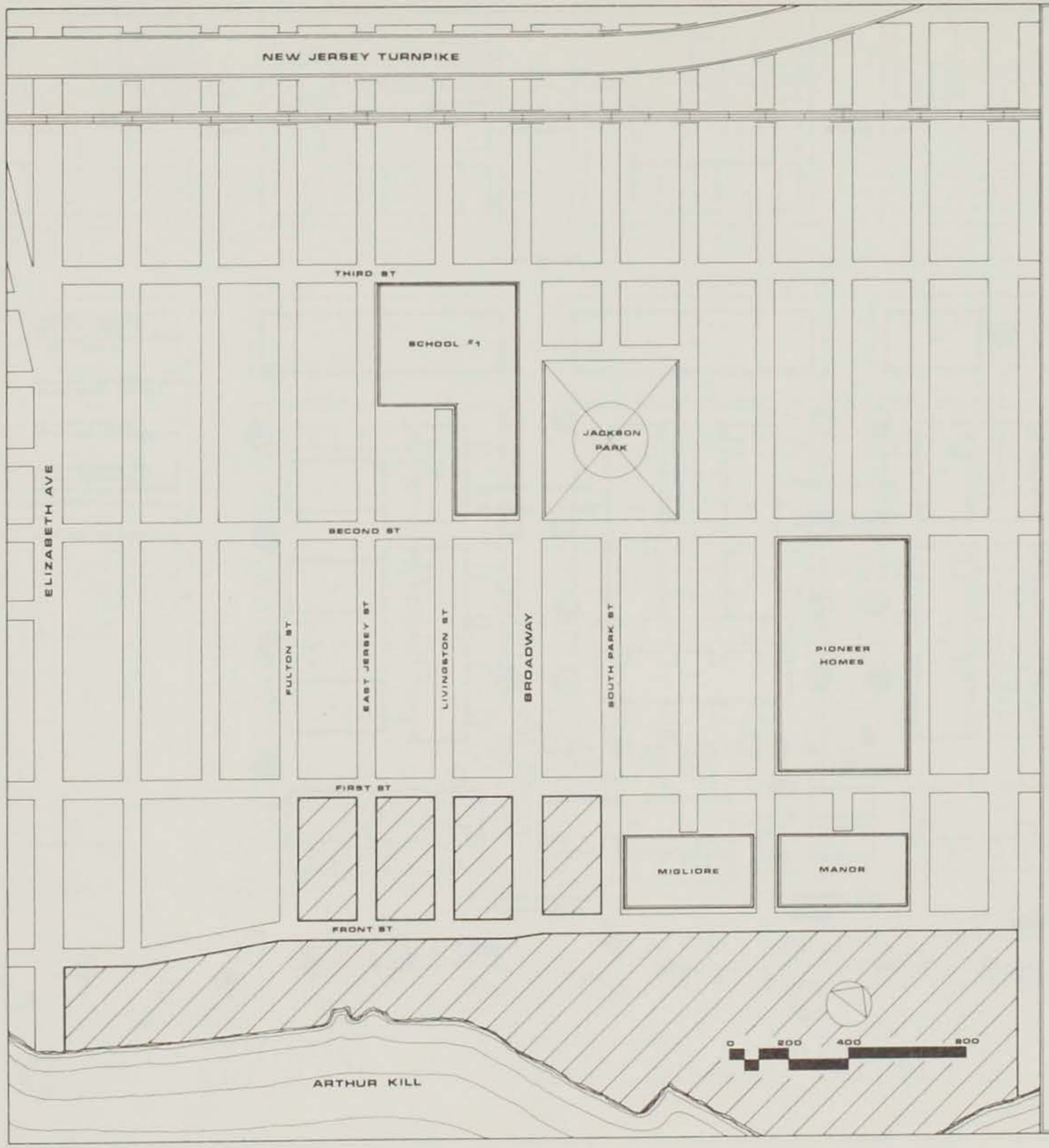
The fact that each of the living units has its own outdoor space, and each unit has been designed to allow for natural ventilation, increases the livability of the unit. The scale of the development with its relationship to the street and, more importantly, the ground, increases the livability of the development as a whole. The mix of unit types, combining living units of one to five bedrooms is another factor lending to make the development a "better place to live."

The location of supporting activities included within the development is such that there should be very little conflict of interest as a result of this siting. The overall development of the site shows an awareness of what activities exist on the surrounding blocks which border the site. This aspect of the design is something which is missing in the layout of the three low-rise, high-density housing projects presently located in the city.

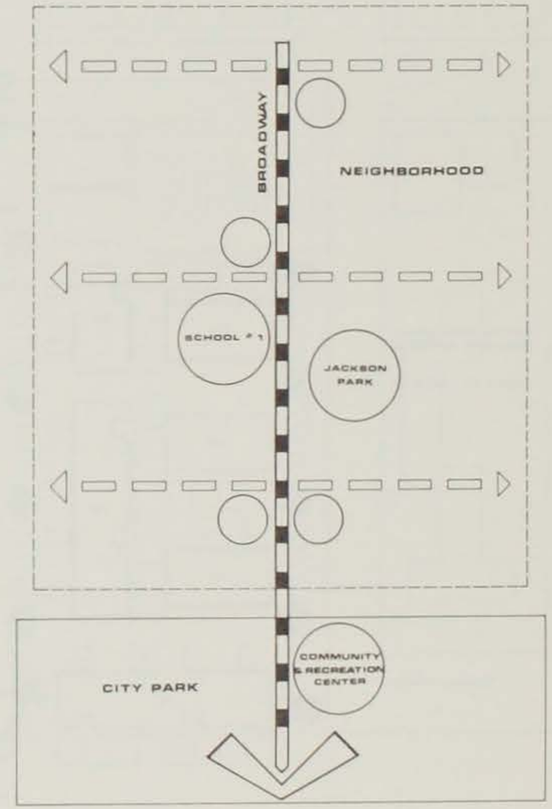
Much thought and research has gone into this study. The resulting solution is only one of several which could conceivably evolve from using the same design criteria and architectural program. This particular solution is not offered as the ultimate answer to all of Elizabeth's housing problems. It is offered as one possible solution for one particular site and should, once again, be looked upon as - an alternative.

LOW-RISE HOUSING FOR ELIZABETH, N.J.

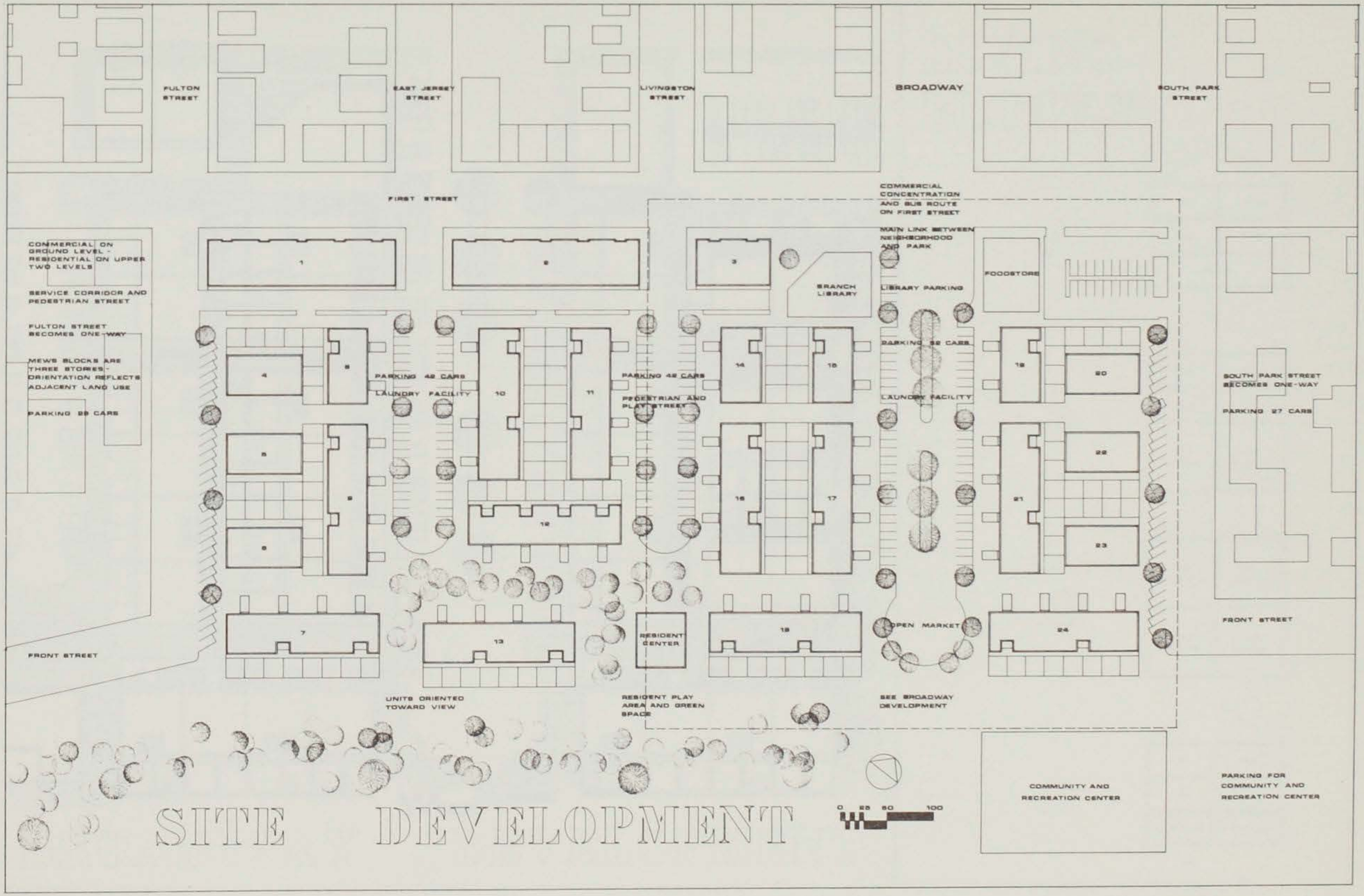
AN ALTERNATIVE



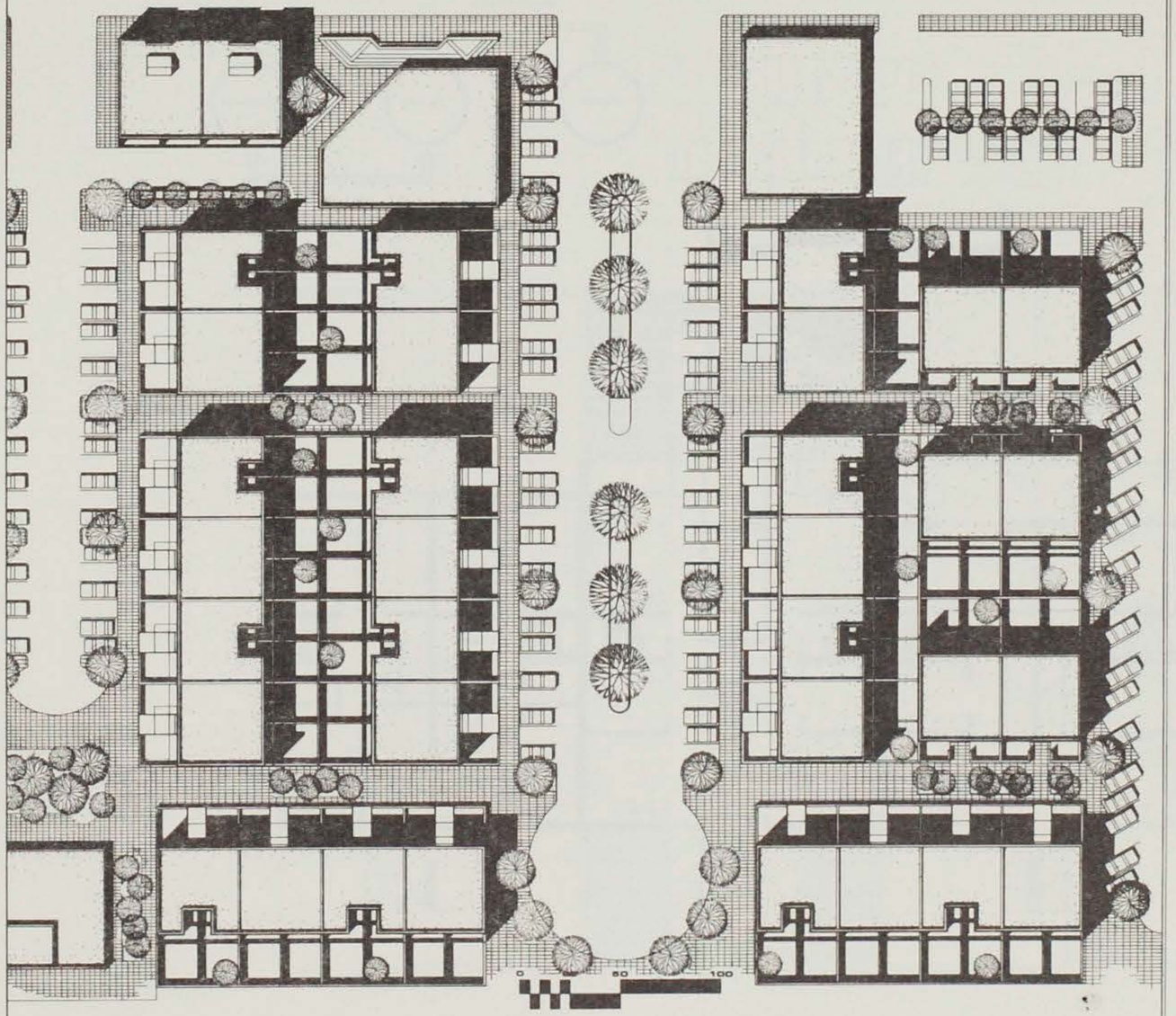
NEIGHBORHOOD



CONCEPT



SITE DEVELOPMENT

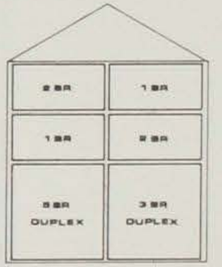


BROADWAY DEVELOPMENT

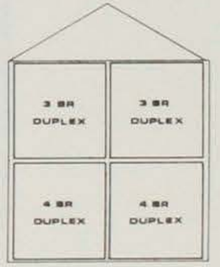
LIVING BLOCKS

A

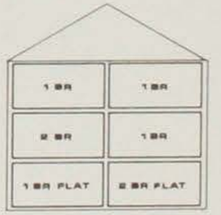
B

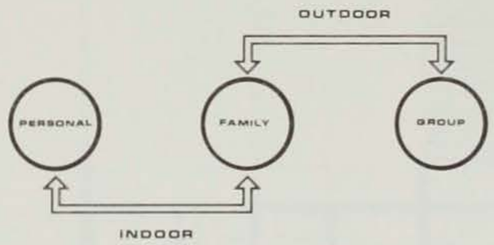


C

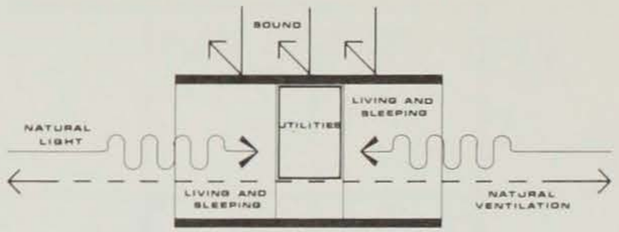


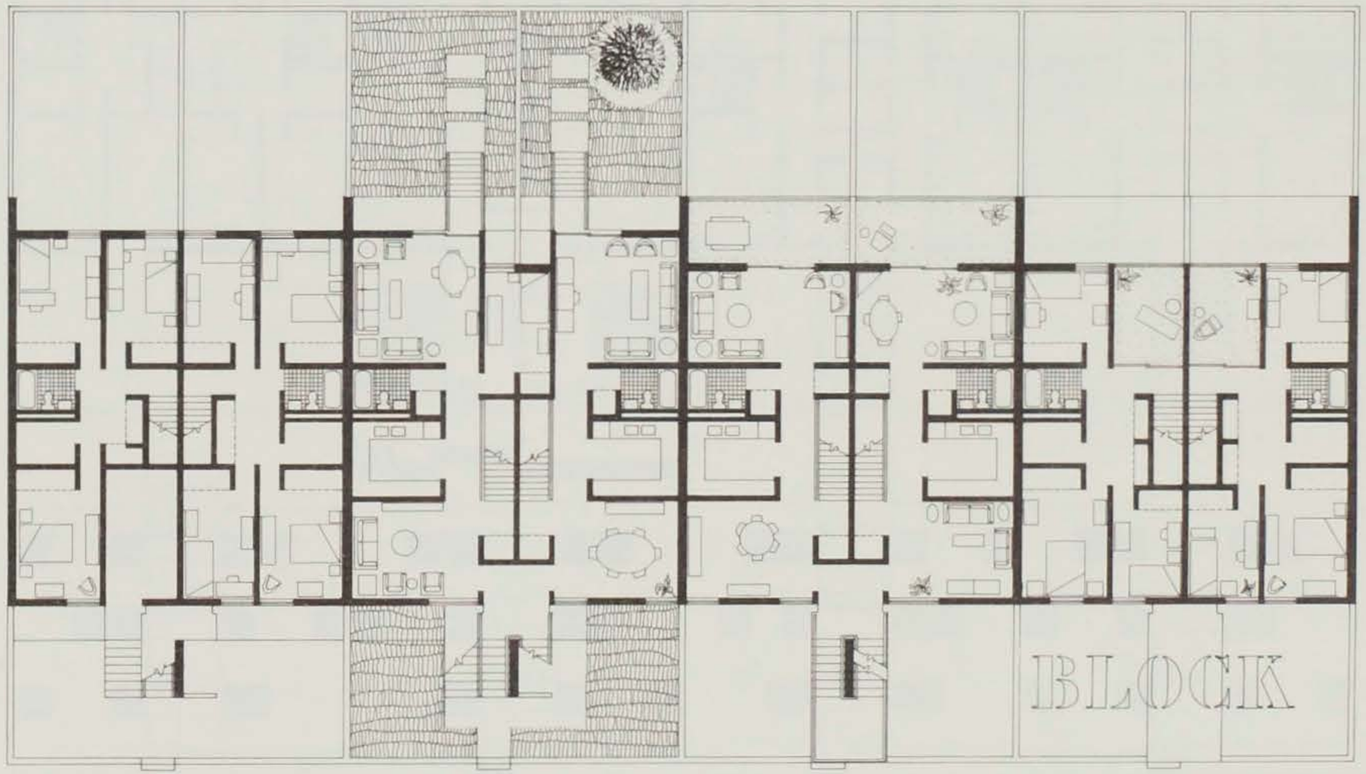
D





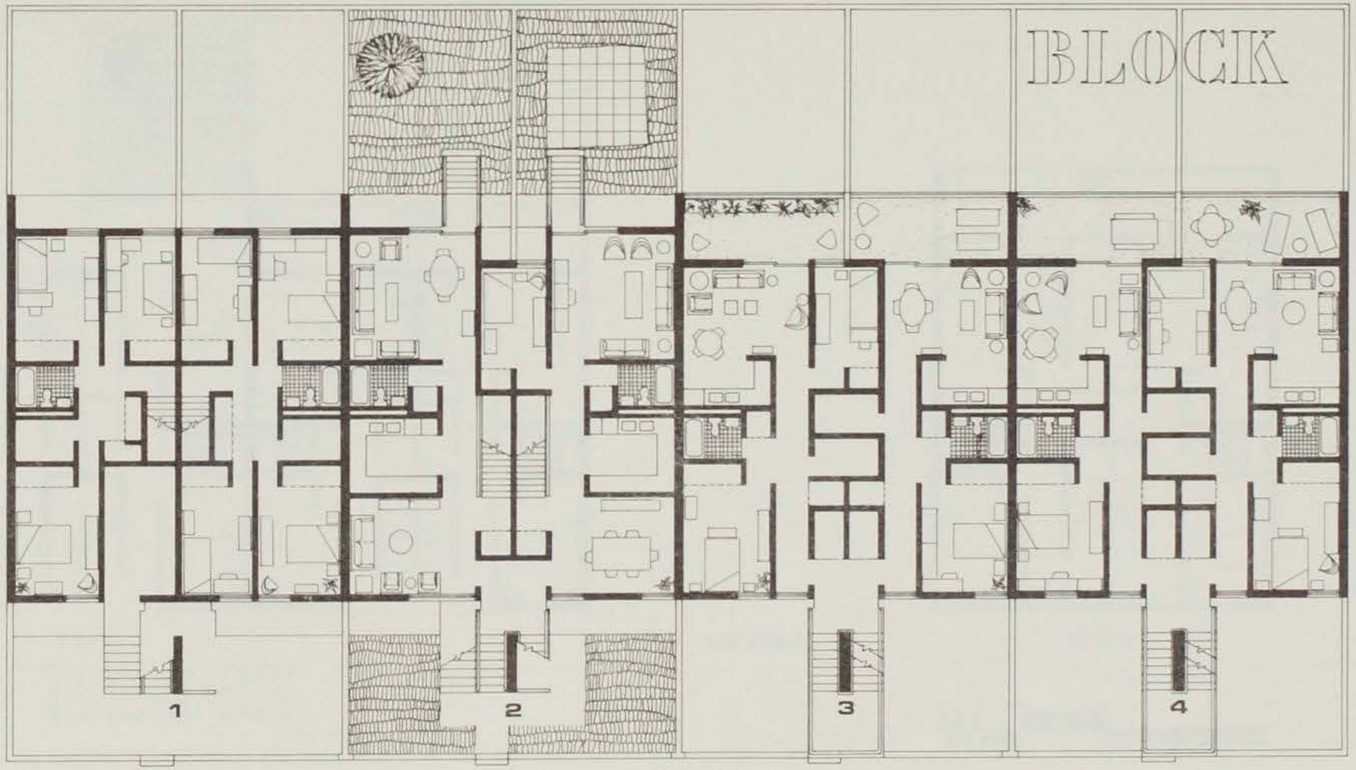
UNIT CONCEPTS

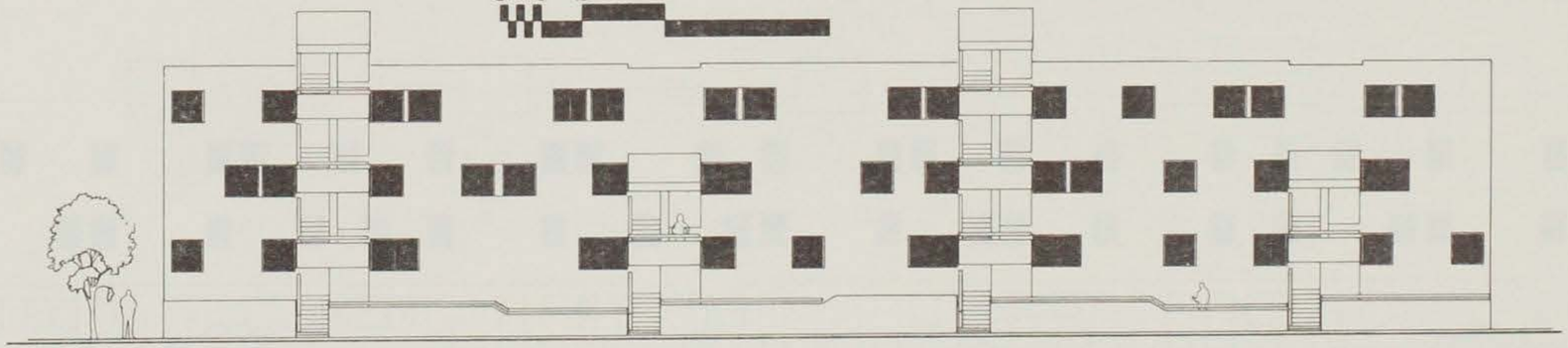




LEVELS 1 2 3 4

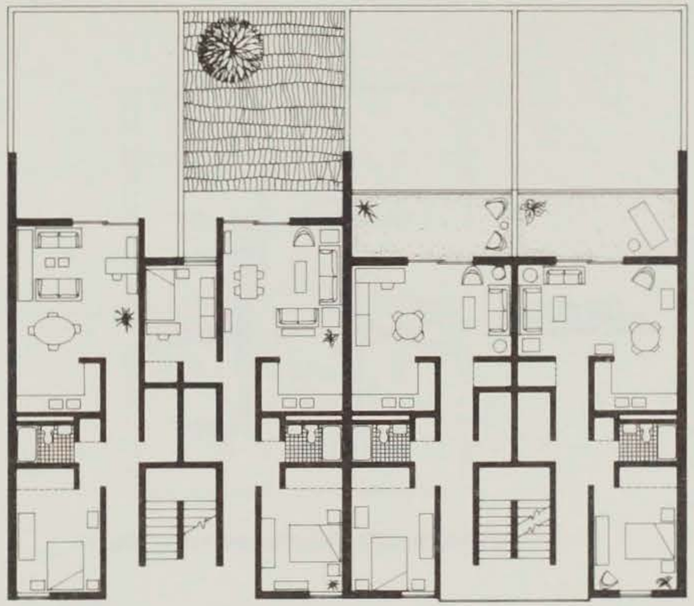
BLOCK B





ELEVATION

TYPICAL OF BLDGS. 7-9-10-11-13-16-17-18-21-24

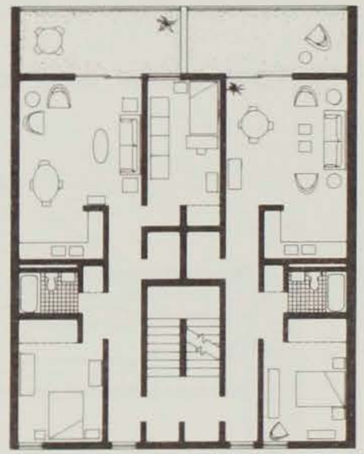


1&2 3

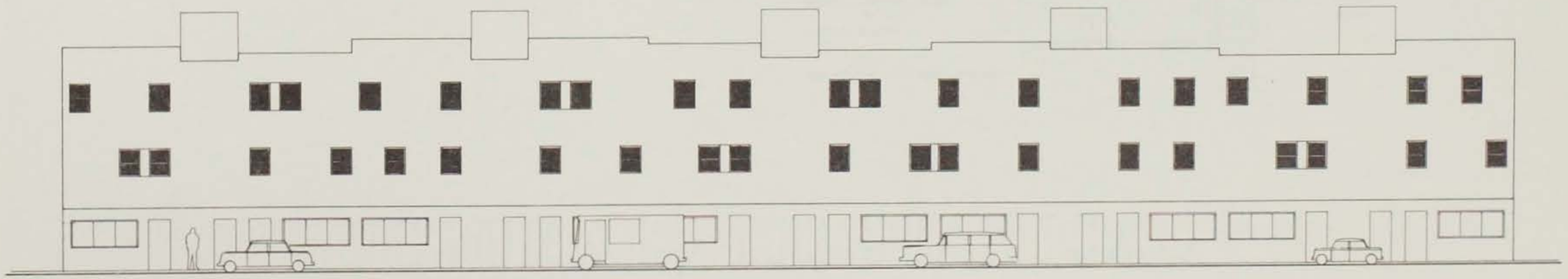
BLOCK D

LEVELS

BLOCK A

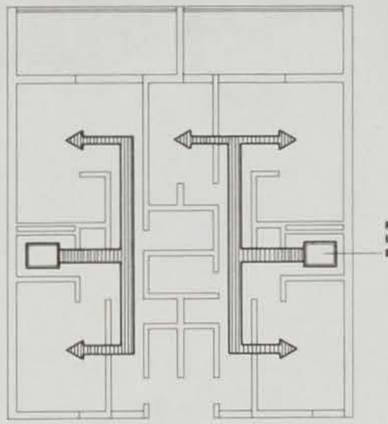


2&3



ELEVATION

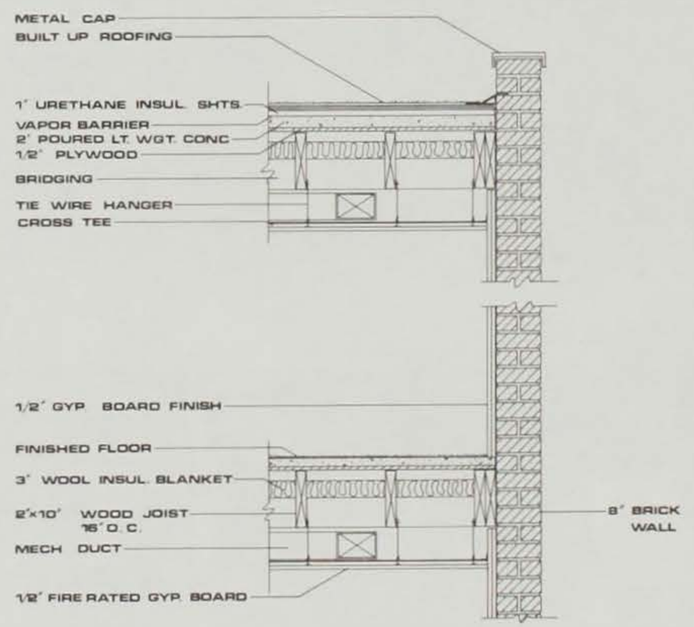
TYPICAL OF BLDGS. ON FIRST STREET



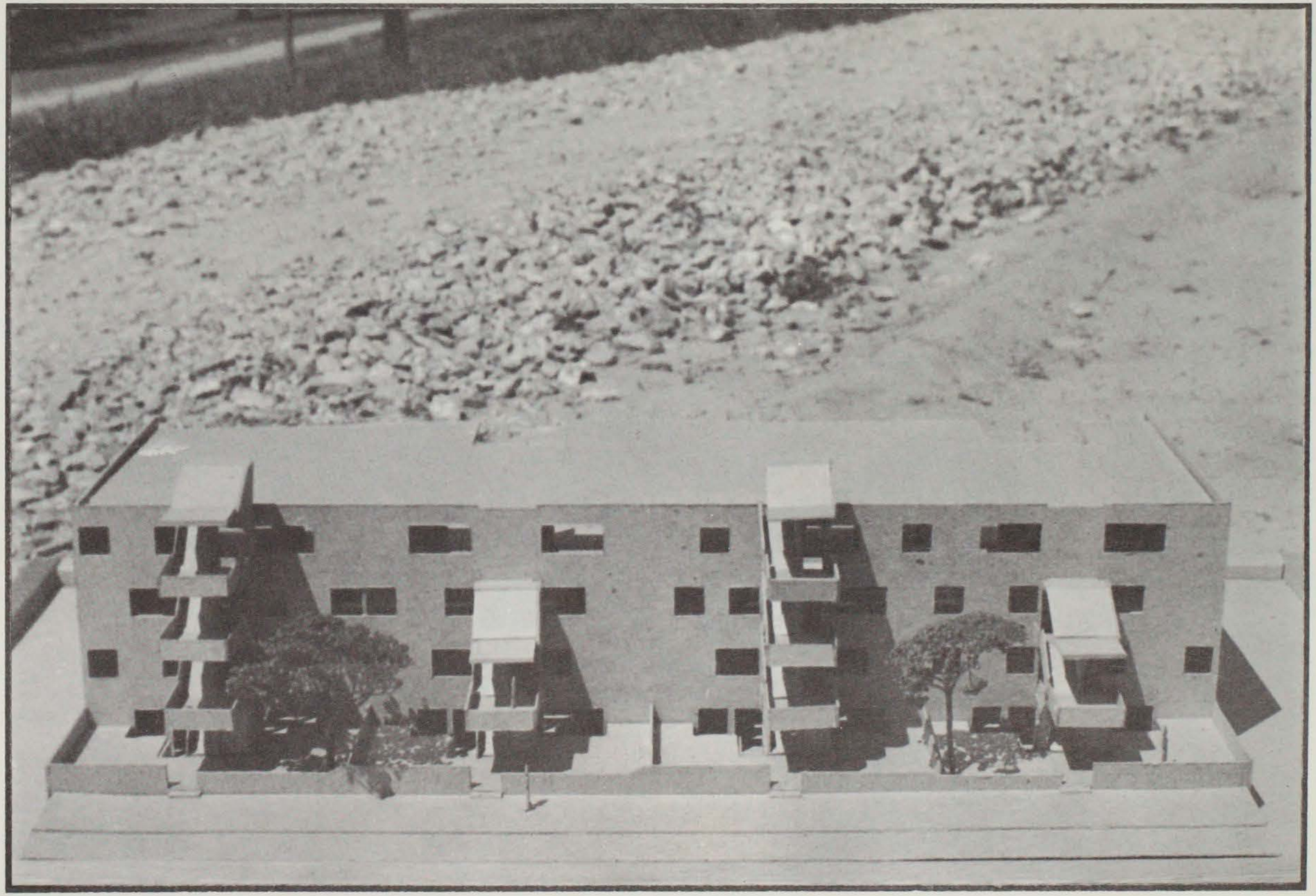
AIR DISTRIBUTION SCHEMATIC

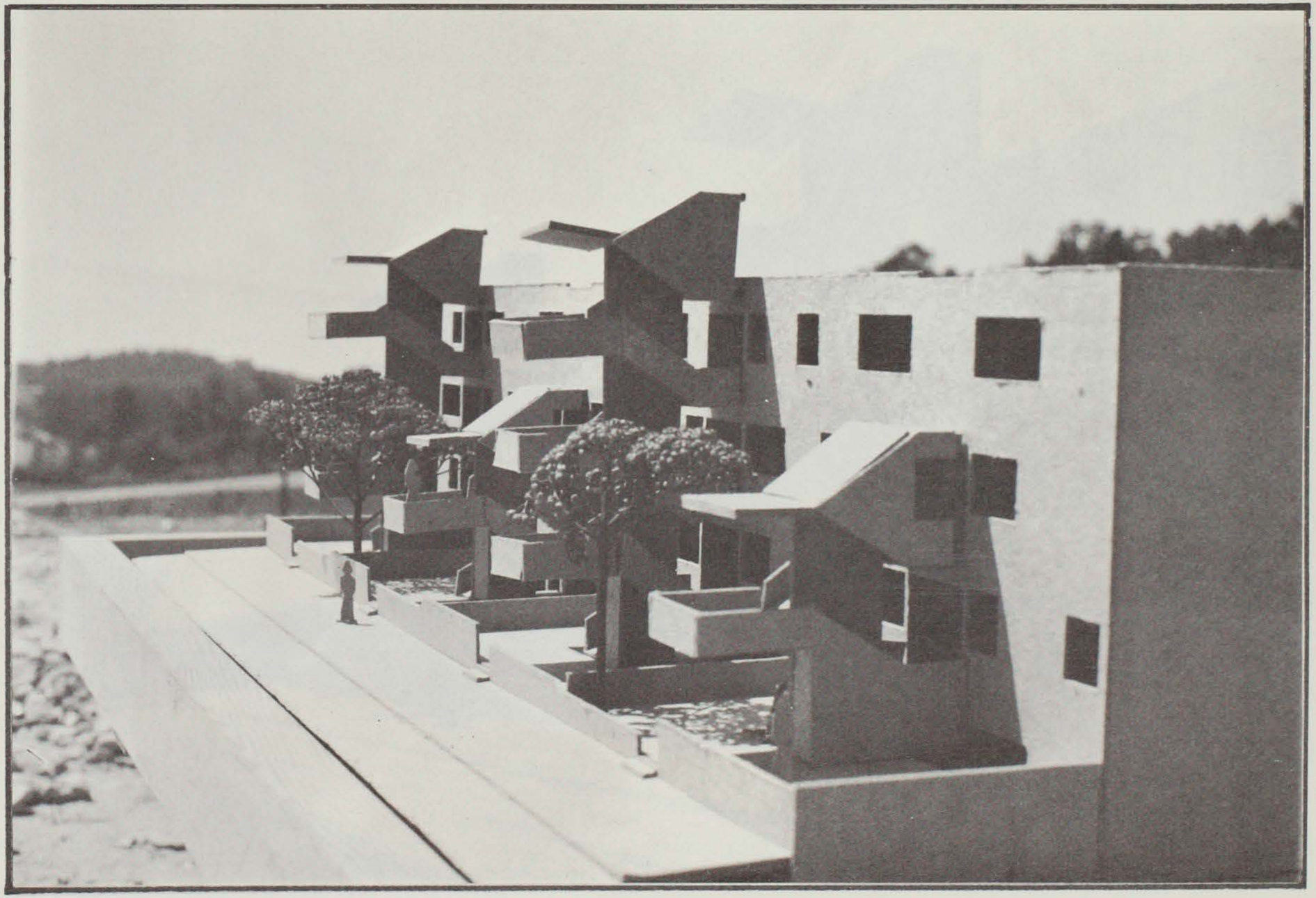
NOTES:
- INTERIOR PARTITIONS TO BE FRAMED IN WOOD
- PARTY WALLS TO BE BRICK BEARING
- WALLS BETWEEN APARTMENTS FIRE RATED TO MEET LOCAL CODES
- INTERIOR PARTITIONS TO BE 2"x4" STAGGERED WOOD STUDS 16" O.C. EACH SIDE WITH 1/2" GYP. BOARD BOTH SIDES (BETWEEN UNITS)
- CEILING IN UNIT CORRIDORS TO BE FIRED DOWN TO ALLOW FOR DUCTS
- OUTSIDE AIR SUPPLIED THROUGH DUCT IN PLUMBING CHASE

TYPICAL WALL SECTION



STRUCTURAL / MECHANICAL





APPENDIX

APPENDIX A - ELIZABETH/OCCUPIED HOUSING UNITS BY NUMBER OF PERSONS PER UNIT

	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6+ Persons	Total
6+ Rooms	732	2078	1660	1676	1234	1641	9021
5 Rooms	833	2236	1812	1602	980	1033	8496
4 Rooms	1378	3186	2280	1614	712	439	9609
3 Rooms	2972	3421	848	330	131	77	7779
1 or 2 Rooms	2669	718	162	69	69	16	3670
Total	8584	11,639	6762	5291	3093	3206	38,575

APPENDIX B - STATE OF NEW JERSEY/OCCUPIED HOUSING UNITS BY NUMBER OF PERSONS PER UNIT

	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6+ Persons	Total
6+ Rooms	37,171	142,199	133,098	169,344	121,589	119,308	722,709
5 Rooms	32,686	97,402	72,450	64,876	36,313	29,554	333.281
4 Rooms	53,536	118,921	71,928	46,105	17,889	10,851	319,230
3 Rooms	87,749	92,361	25,907	8,716	3,003	1,898	219,634
1 or 2 Rooms	56,212	15,099	3,483	1,427	603	450	77,274
Total	267,354	465,982	306,866	290,468	179,397	162,061	1,672,128

APPENDIX F - HOUSING UNITS IN ELIZABETH BY NUMBER OF PERSONS IN UNIT

	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6 Persons	7 Persons	8+ Persons	Aggregate # of Persons	Persons Per Unit	Total Units
Occupied	8,584	11,639	6,672	5,291	3,093	1,587	851	768	110,974	2.88	38,575
Owner Occupied	1,561	3,458	2,397	2,172	1,417	801	432	380	42,587	3.38	12,618
Renter Occupied	7,023	8,181	4,365	3,119	1,676	786	419	388	68,387	2.63	25,957

APPENDIX G - HOUSING UNITS IN ELIZABETH BY NUMBER OF PERSONS PER ROOM

	0.05 or less	0.51 to 0.75	0.76 to 1.00	1.01 to 1.50	1.51 to 2.00	2.01 or more	Total
Occupied	16,893	9,588	8,382	2,779	770	163	38,575
Owner Occupied	6, 506	2,812	2,355	798	124	23	12,618
Renter Occupied	10,387	6,776	6,027	1,981	646	140	25,957

APPENDIX H - DISTRIBUTION OF RENTER OCCUPIED UNITS IN ELIZABETH

	No Cash	Less Than $30	$30-39	$40-49	$50-59	$60-69	$70-79	$80-89	$90-99	$100-119	$120-149	$150-199	$200-249	$250-299	$300 or more
Percentage	2.0	0.7	2.7	2.2	3.3	5.4	6.6	9.2	9.1	19.0	23.3	12.6	2.8	0.8	0.4
Number	526	187	688	562	846	1,397	1,707	2,391	2,353	4,925	6,036	3,267	733	207	94

APPENDIX I - TOTAL FAMILIES BY RATIO OF FAMILY INCOMES TO POVERTY LEVEL IN ELIZABETH

Under .50	.50-.77	.75-.99	1.00-1.24	1.25-1.49	1.50-1.99	2.00-2.99	3.00 or more	Total Persons Below Poverty Level
899	678	873	1,135	1,151	2,672	6,607	15,440	9,560

APPENDIX J - TOTAL FAMILIES BY TYPE OF INCOME

Wage & Salary	Non-Farm Self-Employment	Farm Self-Employment	Social Security or Retirement	Public Assistance or Welfare	All Other Income
25,825	2,328	54	6,578	1,867	10,135

APPENDIX K - TOTAL FAMILIES BY INCOME

$0-2999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 5,999	$6,000 to 7,999	$8,000 to 9,999	$10,000 to 14,999	$15,000 to 24,999	$25,000 to 49,999	$50,000 and over
2,337	1,192	1,295	1,558	3,607	4,170	8,886	5,299	933	178

APPENDIX L - FACT SHEET

		Total Population	Black Population	Total Housing Units	Units in Multi-Unit Structure	Owner Occupied Units	Units Lacking Plumbing
City	#	112,654	17,478	39,413	31.731	12,568	1,435
	%	100%	15.5%	100%	100%	31.8%	3.6%
* Neighborhood	#	10,137	3,877	2.963	2,550	736	153
	%	100%	38.2%	100%	86.1%	24.8%	5.2%
Site	#	364	84	110	99	21	14
	%	100%	23.1%	100%	90%	19.1%	12.7%

* Neighborhood includes area east of Elizabeth Avenue, south of the New Jersey Turnpike, and west of Port Avenue.

APPENDIX M - HOUSING SUPPLY, 1960 and 1966

	1960 Census		1966 Estimate	
Size of Structures	# of Units	% of Total	# of Units	% of Total
1 Family	10,348	30%	10,143	25%
2, 3, 4 Family	17,014	48%	17,125	42%
5 or more Family	7,766	22%	13,448	33%
Total	35,145	100%	40,716	100%

APPENDIX N - HOUSING UNITS CONSTRUCTED 1954-1959 and 1960-1966

	1954-1959		1960-1966	
Size of Structure	# of Units	% of Total	# of Units	% of Total
1 Family	445	23%	138	2%
2, 3, 4 Family	201	11%	593	9%
5 or more Family	1,255	66%	5,802	89%
Total	1,901	100%	6,533	100%

APPENDIX O - HOUSING UNITS CONSTRUCTED, 1960-1966 BY SIZE OF STRUCTURE

Year	Size of Structures				
	1 Family	2, 3, 4 Family	Multi-Family	Total	Multi-Family as Percent of Total
1960	35	97	724	856	85%
1961	33	152	1,035	1,220	85%
1962	27	164	890	1,081	82%
1963	11	60	825	896	92%
1964	16	62	981	1,059	93%
1965	12	26	908	946	96%
1966	4	32	439	475	92%
Total	138	593	5,802	6,533	88%

APPENDIX P - PUBLIC AND PRIVATE MULTI-FAMILY HOUSING CONSTRUCTION

Year	Publicly-Financed	Privately-Financed		
		High-Rise	Garden	Total Multi-Family
1960	-	604	120	724
1961	250	315	470	1,035
1962	-	235	655	890
1963	-	-	825	825
1964	-	-	981	981
1965	385	-	523	908
1966	126	42	271	439
Total	761	1,196	3,845	5,802

APPENDIX Q - DISTRIBUTION OF MULTI-FAMILY HOUSING CONSTRUCTION 1960-1966

	Number of Housing Units	
	East of Penn Central Railroad Tracks	West of Penn Central Railroad Tracks
Publicly-Financed	126	635
High-Rise Apartments	0	1,196
Garden Apartments	1,085	2,760
Total	1,211	4,591

APPENDIX R - STRUCTURAL CONDITION OF HOUSING UNITS BY NEIGHBORHOOD

Neighborhood	Total Housing Units	Sound	Deteriorating	Dilapidated	Unsound Number	Unsound Percent
Elmora	8,470	8,112	313	45	358	4.2%
North Elizabeth	7,285	6,919	310	56	366	5.0%
Bayway	5,153	4,531	407	215	622	12.1%
Peterstown	3,696	2,593	896	207	1,103	30.8%
Keighry Head	1,938	1,583	278	77	355	18.3%
Elizabethport	6,803	6,140	1,845	618	2,463	28.7%
Total City	35,145	29,878	4,049	1,218	5,267	15.0%

APPENDIX S - BUILDING PERMITS ISSUED 1960-1970 HOUSING UNITS BY SIZE OF STRUCTURE

	1 Family	2 Family	3 Family	4 Family	5 or more Families	Total
1960	35	68	3	24	724	854
1961	27	72	0	96	1,035	1,230
1962	26	72	0	84	890	1,072
1963	11	38	0	24	825	898
1964	15	46	0	16	981	1,058
1965	12	12	0	12	896	932
1966	4	26	0	4	439	473
1967	8	6	0	8	61	83
1968	10	8	3	0	46	67
1969	7	26	0	0	75	108
Total	155	374	6	268	5,972	6,775

APPENDIX T - DEMOLITION PERMITS ISSUED 1960-1970 HOUSING UNITS BY SIZE OF STRUCTURE

	1 Family	2 Family	3 Family	4 Family	5 or more Families	Total
1960	27	24	12	4	16	83
1961	27	24	9	4	0	64
1962	27	16	131	4	12	190
1963	23	24	3	4	30	84
1964	30	26	0	4	14	74
1965	151	164	21	20	37	393
1966	32	50	0	4	6	92
1967	28	64	21	12	6	131
1968	26	42	0	12	16	96
1969	42	36	6	4	6	94
Total	413	470	203	72	143	1,301

APPENDIX U - NET CHANGE IN DWELLING UNITS 1960-1970 BY HOUSING CATEGORY

	Owner-Occupied		Private Rental		Public		Total
	#	%	#	%	#	%	#
1960	13,200	38	20,878	59	1,067	3	35,145
1960-70	- 354		+ 5,067		+ 761		+ 5,474
1970	12,846	32	25,945	63	1,828	5	40,619

APPENDIX V - EXISTING PUBLIC HOUSING

Name	Year Built	# of Bedrooms							
		0	1	2	3	4	5	6	Total
Mravlag Manor	1940	0	117	258	48	0	0	0	423
Pioneer Homes	1941	0	72	269	48	8	0	0	397
Migliore Manor	1960	0	11	59	137	37	0	3	247
Farley Towers (Elderly)	1962	55	149	46	0	0	0	0	250
JFK Homes (Elderly)	1966	8	105	12	0	0	0	0	125
Ford-Leonard Homes (Elderly)	1967	6	120	0	0	0	0	0	126
Total			547	644	233	45	0	3	1,568

APPENDIX W - SCHEDULE OF INCOME LIMITS FOR LOW RENT PUBLIC HOUSING

Family Composition	Admission	Special Admission	Continued Occupancy
1 Person	$3,600	$4,200	$4,400
2 Persons	4,400	4,800	5,300
3 Persons	4,700	5,100	5,700
4 Persons	4,900	5,400	6,000
5 Persons	5,200	5,700	6,300
6 Persons	5,500	6,000	6,700
7 Persons	5,800	6,300	7,000
8 Persons or more	6,100	6,600	7,300